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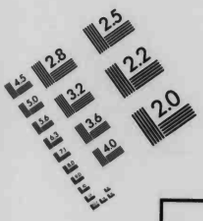
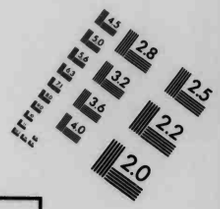
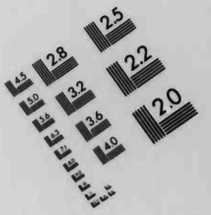
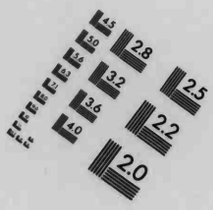

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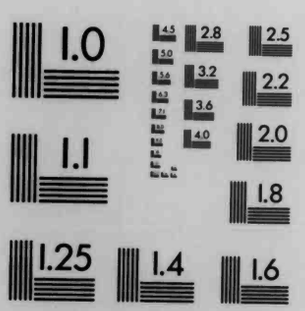

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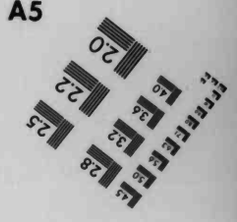
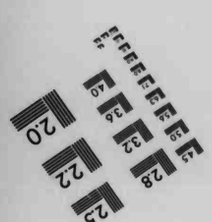
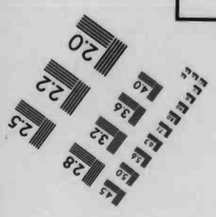
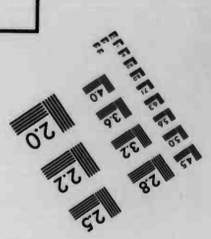

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Foreword

THIS BULLETIN describes the various plans now in effect for settling railroad controversies through conference and cooperation between shippers and carriers instead of through formal litigation before the Interstate Commerce Commission.

It shows that all three of the groups interested in the readjustment of rate schedules—the shippers, the carriers and the Interstate Commerce Commission—are already engaged in an effort to settle railroad rate controversies informally whenever possible.

The inquiry from which data was obtained for this bulletin was carried on under the supervision of the Committee on Railroads. It is the judgment of the Committee that activities along this line should be encouraged and extended, not only as a practical means of relieving the overburdened Interstate Commerce Commission, but as a measure of far-reaching importance in the public interest.

C. W. LONSDALE, *Chairman*
Committee on Railroads

1454
March 15, 1930

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Chapter I—Introduction

A RAILROAD RATE controversy may be settled through:

(1) conference and cooperation between the shippers and the carriers directly involved in each particular controversy;

(2) informal negotiations carried on by the two parties to the controversy with the aid of the Interstate Commerce Commission acting as mediator; or

(3) formal litigation before the Interstate Commerce Commission or before one of the 47 state Railroad Commissions.

The first and second of these methods—the informal methods of settlement as contrasted with formal methods—are described in this bulletin.

Each of the three groups that are involved directly or indirectly in every rate controversy—the shippers, the carriers and the Interstate Commerce Commission—has established some form of organization to aid in the process of informal settlement.

The Commission has created two bureaus that seek to reduce the amount of formal rate litigation—the Bureau of Informal Cases and the Bureau of Traffic. The organization and work of these bureaus are described in Chapters II and III of this bulletin.

The railroads have appointed Standing Rate Committees as a part of each of the nine major railroad freight associations and, in confernece with a committee of the National Industrial Traffic League, have devised for these rate committees a procedure intended to give every shipper an opportunity to present his views to the carriers before any rate change that affects him can be adopted. The organization and work of these standing rate committees are described in Chapter IV of this bulletin.

The shippers have established in local chambers of commerce and in local and national trade associations traffic bureaus that have as one of their most important functions the settlement of rate controversies through conference and cooperation instead of through formal litigation before the Interstate Commerce Commission. The organization and

work of some of these bureaus are described in Chapters V, VI, VII and VIII of this bulletin.

Numerous organizations—official and unofficial—have proposed plans for developing more cooperation between the various agencies directly concerned in the informal settlement of rate controversies. Some of these plans are outlined in Chapter IX of this bulletin.

If a particular rate controversy involves the readjustment of established relationships between the rates published for different commodities or different industries or different geographical districts or perhaps requires a new application of some important provision of the Interstate Commerce Act, it may be necessary for the interested parties to file a formal complaint with the Interstate Commerce Commission and to carry on long and expensive litigation; but if the case is merely a repetition of scores of previous cases in which the Commission has applied recognized rate making principles, it can generally be settled more quickly, more satisfactorily and at far less expense through informal conference between the interested parties.

In recent years there has been a general expression of opinion in favor of increased use of established methods of settling rate controversies informally. All three of the groups concerned would be helped by such an increase and, therefore, all three are seeking to perfect and promote more general use of existing methods of informal settlement. This bulletin is intended to help them to accomplish that purpose.

Chapter II—Bureau of Informal Cases

THE Interstate Commerce Commission maintains two bureaus that settle informally many railroad rate controversies—the Bureau of Informal Cases, which devotes its entire time to this work, and the Bureau of Traffic, which performs in addition other important functions.

The Bureau of Informal Cases serves as an intermediary between complainants and railroad companies in adjusting by correspondence complaints brought by shippers and passengers and by the carriers. It deals also with general

inquiries and with reparation claims submitted on a special docket. The work of the bureau is handled by two sections and an advisory board:

Informal Complaints Section attempts to dispose promptly of all informal complaints. Its decisions are not binding, however, upon the parties who may insist upon formal hearings.

Special Docket Section passes upon applications of carriers to make voluntary settlement with shippers when they find that the charges on particular shipments, while conforming to the published tariffs, are for some cause unreasonable.

Board of Reference aids in the disposition of the more difficult informal complaints, or those for which no precedent is at hand. This Board is composed of the Directors of the Bureaus of Informal Cases, Accounts and Inquiry, the Chief Examiner, the Assistant Chief Counsel and the Assistant Director of the Bureau of Traffic with their assistants as alternates.

Progress Reported in Every Annual Report

THE Interstate Commerce Commission has always recognized the importance of settling rate controversies by informal methods whenever possible. In its first annual report submitted to Congress in 1888 the Commission said:

> The complaints made to the Commission have been very numerous. * * * In no case has the Commission declined to give attention to a complaint because of its being informal * * * If the facts indicated a probable grievance it has opened correspondence with the carrier with a view to redress. In the majority of cases the correspondence has resulted in satisfactory arrangement. * * * This method of disposing of complaints is believed by the Commission to be more useful than any other because its tendency is towards the establishment of desirable relations between the carriers and those who must be their customers.

In every succeeding annual report during the 42 years that have elapsed since that time, the Commission has recorded further progress in this branch of its work. For example, in 1895 the Commission said:

> The investigation of informal complaints, of which a large number are received yearly, occupies a large portion of the time of the Commission and constitutes an important branch of its work. As stated

in former reports, these investigations result in many cases in summary relief to complaining parties. Shippers and consignees are also, without trouble or expense to them, timely advised when their complaints are based upon misapprehension of facts or of the legal duties of carriers under the law. Again, shippers are enabled, when the informal investigation fails to result in satisfactory adjustment, to consider the advisability of taking formal action against the carrier in the light of facts brought out through this method of preliminary examination and correspondence.

In 1900 the Commission said:

The importance of these informal investigations by the Commission has not been fully appreciated. Many of them involve difficult examinations of tariffs and voluminous correspondence extending over considerable periods. When a shipper considers himself aggrieved on account of some transportation charge or practice, the adjustment of related rates, or failure on the part of the railroad company to provide usual or necessary transportation facilities, he writes to the Commission, stating the situation in his own way, and the Commission, having on file in its office all tariffs and rules and regulations governing interstate traffic by railroad, proceeds with the investigation. It frequently happens that the shipper is mistaken as to the facts, or misunderstands the effect of the situation, and when that becomes apparent he is so informed by the Commission. On the other hand the papers in the informal investigation may indicate a case for the shipper, but in which the carrier for reasons of its own, refuses to afford relief, and when this happens the shipper must institute a formal proceeding or continue to bear the unjust burdens. Nevertheless, as above indicated, a large percentage of the grievances so presented to the Commission are removed by these investigations.

In 1906 Congress passed the Hepburn Act which gave new authority to the Commission and added force to its decisions. In the following year the Commission said in its annual report:

During the present year 4,382 complaints of this character (informal) were filed with the Commission against 503 in the year 1905 and 1,002 in the year 1906, showing an increase of more than 400 per cent over the preceding year. * * *

The increased power vested in the Commission by the recent amendments to the Act has naturally led to the multiplication of the number of complaints presented by letter, and these complaints relate to every conceivable subject connected with rates, methods, practices and service of interstate carriers. * * *

The public is not advised of the full extent of the work accomplished in securing through correspondence the voluntary adjustment by carriers of questions in dispute relating to inter-state transportation, nor is the public cognizant of the extreme importance and value of the results attained.

In 1917 the Commission said:

Experience has shown that many controversies between shippers and carriers can be and are adjusted by correspondence and by informal conference. Many others could be disposed of in this manner

if the interested parties would approach the matter with a disposition to reach an even handed adjustment. Generally speaking the carriers and shippers show a disposition to cooperate. Where controversies can properly be settled in this manner it is, of course, to the interest of the shippers, the carriers and the Commission that they should be so adjusted and the time and expense of a formal complaint and hearing thereby avoided.

Record for 1929

DURING the year 1929 the Bureau received 7,339 informal complaints. In addition the carriers filed 11,343 special docket applications for authority to refund amounts collected under public tariffs admitted by them to be unreasonable. In 10,038 of these cases the Bureau recommended and the Commission authorized the necessary refunds. During this year the Bureau also handled 44,000 letters, of which many had the characteristics of informal complaints, although not so classified, while others sought general information and informal rulings upon the rights and obligations of the public and the common carriers under existing statutes. A large proportion of the informal complaints disposed of by this Bureau involved questions that, if not satisfactorily adjusted, might easily have resulted in formal litigation.

Chapter III—Bureau of Traffic

THE Bureau of Traffic was organized by the Interstate Commerce Commission in 1920 to aid the Commission in meeting the increased duties laid upon it by the Transportation Act, 1920 and contemporaneous legislation. In its annual report for that year the Commission said:

In this Bureau we have consolidated the several boards, sections and divisions which have heretofore dealt with the publication and filing of tariffs; the suspension of rates pending investigation; applications for relief from the provisions of Section 4 of the Act; the classification of freight and express charges; and practically all matters affecting charges for transportation other than proceedings on our formal docket and complaints of an informal character handled by our Bureau of Informal Cases. * * *

In addition to the special work of the various units of the Bureau outlined below, its activities are directed toward the adjustment by informal conferences and correspondence of controversies arising between shippers and carriers, and settlement of differences between carriers concerning divisions of joint rates, designed to promote harmony between the carriers and the public, facilitate the disposition of urgent matters and lessen the number of matters eventually brought before us on formal complaint.

Bureau of Traffic Uses the Conference Method

The two Commission bureaus use very different methods in their attempts to adjust rate disputes informally. The Bureau of Informal Cases handles each matter entirely by correspondence; while the Bureau of Traffic usually brings the two parties together in conference and sits with them at the conference table. In its annual report for 1921 the Commission said:

> In the endeavor to settle as many of these controversies as possible without the delay and expense incident to formal proceedings, numerous conferences have been held both in Washington and other points accessible to the interested parties. These conferences have considerably lessened the number of cases which otherwise would have been instituted upon our formal docket, and have made for harmony between shippers and carriers, and between competing carriers.

In every succeeding annual report the Commission has reported progress in this phase of the work of the Bureau of Traffic. For example in its report for 1929 the Commission said:

> The Bureau acts in an advisory capacity in connection with the disposition of most of the more important formal cases involving general rate policies and extensive adjustments. It handles administrative matters connected directly with rates and tariffs, and assists in the settlement through informal negotiations between shippers and carriers of as many controversies as possible without litigation.

Organization for Informal Settlement

The Director of the Bureau of Traffic said in a recent statement:

> The higher officials of this bureau consist of a director, three assistant directors, and one assistant to director. All of these are available for the work of adjusting controversies between carriers and shippers or between carriers. One of the assistant directors specializes on law questions, one on questions of reasonableness and discrimination, and the third, together with the assistant to director, on matters of tariff interpretation and questions of what constitute the lawful rates on particular shipments or classes of traffic. The director deals with all classes of controversies, including divisions between carriers, although only a very few of the latter kind of disputes have been submitted, but most of the work of the director in this regard has to do with reasonableness or with undue prejudice and preference.
>
> In addition to the above officials there are three other sub-officials in the section of tariffs who are available for disputes involving tariff interpretation, although their principal work has to do with the form and substance of tariffs. It should, however, be borne in mind that most disputes with respect to what constitute lawful rates arise out of ambiguities in the tariffs, and the work being continually performed by this bureau leading to simplification of tariffs and more

> strict observance of the Commission's tariff rule has for its principal object the lessening of the controversies with respect to tariff interpretation matters.

Procedure for Informal Settlement

In the same statement the Director described the procedure of the Bureau as follows:

> Disputes are submitted to the bureau either by correspondence or in person. Where carriers or shippers submit disputes in writing, all the available facts are called to the attention of all known interested parties and after each has been given full opportunity to present his views, an informal expression is made by the officials of this bureau in writing. Of course such informal expressions do not bind the Commission nor are any of the parties barred from disputing such findings or resorting to litigation if they see fit.
>
> Where matters are handled by conference, in practically all cases such conferences are held in Washington. It is a practice of this bureau to endeavor to ascertain all parties who would be interested in the problem and to give all such parties due notice of the time of the conference in order that all interests may be represented. At such conferences everyone is given full opportunity of expressing his views in full and the official of this bureau does everything possible to bring out all the facts through questions and discussion. The effort in all such conferences is to bring about agreement between the parties rather than to attempt to pass judgment upon the merits of the dispute.
>
> Another object continually borne in mind is the building up of good will between the respective parties with a view to avoiding any dissatisfaction as a result of the outcome. Frequently, after the parties have been heard from the meeting is temporarily adjourned and the matter discussed by the representative of the Commission with one or the other or both of the disputing parties without the presence of the opposing party. It is often possible at such separate discussions to bring about modification of the position of the parties believed to be at fault. Sometimes such concessions are obtained from both sides.
>
> It is always sought to bring about an adjustment that will be as practical as possible and will best serve the needs of commerce. As a matter of fact, frequently solutions of problems can be brought about at informal conferences that are more satisfactory than anything that could be done by the Commission as a result of formal proceedings. Manifestly, when the Commission decides a formal case, it is limited in its findings to the powers prescribed by law, except that it can at times express opinions that go a little further than the direct findings. But in the main the Commission is limited to a finding as to what constitutes a reasonable and non-prejudicial rate, where sections 1 and 3 of the act are in issue. By reason of the limitations placed by law upon the Commission it is often true that decision by it may be less pleasing to both parties than would some compromise adjustment which the carriers would be free to put into effect without direct approval or order of the Commission, but which the Commission could not order.

Typical Illustrations

The following outline of three important situations which were handled informally with the aid of the Bureau of

Traffic serves to illustrate the work that the Bureau is doing in this field:

1. Because of numerous complaints with respect to discrepancies between the minimum weights and rules governing the shipment of mixed carloads of grain and grain products in various parts of the country, three conferences were held with shippers and carriers as a result of which uniform minimum rates and rules of this character were published by practically all carriers throughout the United States. These were made effective about two years ago and so far as known to the Bureau there has been practically no complaint, formal or informal. The three conferences lasted about one day each, and the time and expense to the parties involved was vastly less than if the matter had been made the subject of formal proceedings, to say nothing of the fact that the new rules were made effective within three months of the time the subject was first taken under consideration, whereas it usually requires from 15 to 24 months for definite results to accrue from a formal proceeding.

2. Because of existing controversies between shippers and carriers over class rates in western trunk line territory, two conferences were held as a result of which a readjustment was made effective. While this readjustment has been reasonably satisfactory to most of the parties it did not prevent litigation. Indeed, it was only intended to bring about temporary settlement of the issues in order to enable more extended time to be given to a formal investigation of the situation which is now being conducted by the Commission in a proceeding entitled *Western Trunk Line Class Rates.*

3. Great confusion and lack of uniformity existed with respect to transit rules governing grain and grain products at the important midwestern markets such as Kansas City, St. Louis, Minneapolis, Omaha and Chicago. Many of such rules were ambiguous and resulted in frequent disputes as to the applicable charges, while others were at variance with the principles of transit enunciated by the Commission in various decisions. As a result of three conferences, revised rules uniform at all of these markets were made effective, which have been generally satisfactory. It was intended to extend the conferences and readjustment also to the rules at interior transit points through the middle west but as a result of the inclusion of transit questions in the General Grain Investigation undertaken by the Commission as a result of the Hoch-Smith Resolution it was found necessary to drop further negotiations for informal settlement of the interior rules.

Chapter IV—Standing Rate Committees

THE railroads also make definite provision for settling rate controversies informally whenever possible. They maintain in each section of the country a Freight Association whose duty it is to docket for public information every proposed change in rates and, if necessary, to hold public hearings on any proposal that is questioned by the shippers or carriers affected.

Railroad Freight Associations

The railroads in each section cooperate in publishing uniform freight rates, rules and practices that apply on certain

kinds of traffic handled by them. Each freight association operates in a particular geographical district. The nine major associations are:

New England Freight Association
Trunk Line Association
Central Freight Association
Southern Freight Association
Western Trunk Line Committee
Southwestern Freight Bureau
North Pacific Coast Freight Bureau
Pacific Freight Tariff Bureau
Trans-continental Freight Bureau

There are also five minor freight associations, five local freight associations and six specific associations that each perform in a smaller territory functions similar to those performed by the major associations.

Each of these associations maintains standing committees that give careful consideration to all of the rates proposed in its territory before they are published, and, if necessary, hold public hearings at which any shipper may appear and present his views. These committees adjust nearly all of the rate disputes between shippers and carriers in their respective territories.

In each of the major classification territories—Official, Southern and Western—the railroads also maintain a Classification Committee whose function is to group all commodities carried by railroad into a limited number of classes and to make necessary changes and additions from time to time. After the articles have been grouped by the Classification Committees the carriers name rates for each class, and the rate for each class applies to all commodities in that class. One of the important functions of these Classification Committees is to adjust classification disputes that arise in their respective territories.

A Typical Freight Association

The Southern Freight Association may be regarded as typical of the entire group of regional freight associations that have been established by the railroads. This association

is composed of railroads operating in the territory governed by Southern Classification south of the Ohio and Potomac Rivers, and east of the Mississippi River, and includes also coastwise steamship lines that, with the railroads form through routes via Virginia and South Atlantic ports. Its purpose is to consider all matters of mutual interest, such as rate adjustments and general rules, regulations and practices.

The Association has three standing committees that deal with rate matters:

1. A Standing Rate Committee composed of four members who give their entire time to this work. This Committee remains in continuous session at the headquarters in Atlanta, and considers all proposed changes in rates, rules and regulations which may be initiated by either the shippers or the carriers.

2. A General Committee of 23 traffic officers of the member railroads to which the Standing Rate Committee refers proposed rate changes that, even after public hearings have been held, are opposed by either the shippers or the carriers or both.

3. An Executive Committee composed of 23 traffic vice presidents of the member railroads of the Association. A recommendation of the General Committee for or against any proposal may be appealed to the Executive Committee.

Every proposed rate change is distributed promptly by the Chairman of the Association to member lines, and at the same time is referred to the Standing Rate Committee for investigation and recommendation. A date for public hearing is set. The public is advised, through the Weekly Docket Series issued by the Association and through the Weekly Traffic Bulletin issued in Chicago, of the date of the public hearing. The dockets and a Weekly Status Report are widely distributed to shippers, chambers of commerce and traffic departments of civic bodies.

Procedure of Rate Committees

The procedure to be followed by the Standing Rate Committees in docketing proposed rate changes, and in conducting public hearings when necessary, is described in a docu-

ment entitled "Agreement between the National Industrial Traffic League representing shippers, and the Traffic Executives representing railroads in Eastern, Southern and Western Districts, covering the docketing of tariff changes and the procedure before Rate Committees." This agreement is printed in full in Appendix A of this bulletin.

Mr. W. H. Chandler, Chairman of the National Industrial Traffic League Committee that negotiated this agreement with the Traffic Executives, said in 1927:

Cooperative Rate Making — It seems to me that we have about the nearest thing to cooperative rate making that can be devised. * * * Under the agreement between the railroads and the shippers all rate changes are docketed for public information, and if desired there is discussion across the table, shippers are given every opportunity to present their views and if the rate committee does not give full weight to the shippers' presentation they have a right to appeal to the traffic executives, and pending the appeal the rate cannot become effective. * * * In Trunk Line Territory the number of subjects on which public hearing is requested by shippers, or deemed necessary by the carriers, approximate 1% of the total number of rate proposals handled.

Right of Shippers — I find there are a very large number of shippers who do not avail themselves of the procedure that has been provided under the agreement referred to. I also find that there is a great deal of misunderstanding as to how these rate committees function, and as to the rights of interested shippers. * * * There are many shippers who are laboring under the misapprehension that the rates proposed by these rate committees are finally determined by them. * * *

Plan Entirely Practicable — It is highly desirable that those who have individual rate problems should get together with the carriers and endeavor to iron them out in conference. This is entirely practicable, and in fact provided for under the rate committee procedure. Furthermore, there is nothing to prevent some particular adjustment which he thinks is necessary. * * * I think we have a good piece of machinery now, and like our automobiles, if properly used it will give right good service. On the other hand, if not properly used, or not in use at all, dissatisfaction is bound to result. * * * The Rate Committees are good bodies to stick to until we can find something that we are quite sure is much better.

Commission Approves Plan

In its annual report for 1920, the Interstate Commerce Commission approved the foregoing plan in the following language:

Pursuant to plans for promoting harmony, carriers have since their return to private control, continued in a modified form a system inaugurated by the Director General of issuing to the public announcements of proposed rate changes and conducting public conferences at which interested parties are afforded an opportunity of presenting facts with respect to such proposed changes before they are made

effective. * * * We believe that this system will materially assist in maintaining a spirit of cooperation between the shipping public and the carriers, and will tend to lessen the number of disputed matters eventually brought to us for disposition in a formal way.

Chapter V—Traffic Bureaus of Chambers of Commerce

CHAMBERS of Commerce in all parts of the country now recognize that the informal settlement of railroad rate controversies is one of their most important transportation functions, and, therefore, they make it an integral part of the work of their traffic bureaus.

In response to an inquiry from the National Chamber, 40 local chambers have furnished a brief summary of the plans, methods and results of the work they are doing in this field. Their reports show that although the local chambers have not organized their traffic bureaus in accordance with any uniform plan, they all base their traffic work on the same fundamental principles, and nearly all achieve a considerable degree of success in the informal settlement of railroad rate controversies.

Many traffic bureaus believe that shippers and carriers could settle informally a large number of the rate disputes that are now submitted to formal litigation. They assert that a wider use of the informal methods now in effect would accomplish three definite aims:

First, it would settle many disputes more promptly and more satisfactorily than they can be settled by formal procedure.

Second, it would enable the shippers, the carriers and the Commission to save a large amount of money that is now spent in litigation.

Third, it would relieve the Commission of a considerable part of its present unnecessary burden.

In order to assure the success of any plan for the informal settlement of railroad rate controversies certain conditions must be fulfilled. There must be (1) a sincere desire on the part of both shippers and carriers to cooperate in this work; (2) a clear recognition of the shipper's right to adequate service at reasonable rates; (3) an equally clear recognition of the fact that the carriers can provide the

facilities and furnish the service demanded by the public only if they are permitted to earn an adequate revenue; (4) a willingness and an ability on both sides to prepare the necessary data before proposing a new rate adjustment, and (5) an established and recognized procedure for informal settlement based on common-sense business methods.

The following paragraphs are quoted from letters received from typical traffic bureaus in widely separated cities where informal methods have proved helpful in the settlement of rate controversies:

Merchants Association of New York

The Merchants Association of New York maintains a well-equipped traffic service for its individual members and for the community; and in addition helps New York shippers to make a maximum use of the opportunity for informal settlement that is afforded by the carriers' Standing Rate Committees. The Association says:

Advice to Members The Merchants Association does not take part in the settlement of rate controversies between its members and transportation companies; it will give its members an opinion in any rate controversy which is submitted to it. It acts in an advisory capacity but not as counsel. * * * It is not a proper function of a commercial organization to intervene in rate controversies between its members.

Community Service There are some transportation problems, however, that are too large for any individual shipper to handle. In such cases it becomes the duty of the commercial organization to look out for the general good of its membership and the community it represents.

Standing Rate Committee The machinery that is now in use for the settlement of rate controversies before the rates are published is the best that can be devised, for it gives every one an ample opportunity forcefully to present his side before the tariffs are published. If a shipper is unable to convince the carriers of the correctness of his position after the conferences which are provided for under the present working arrangement, and if he insists on pursuing the matter further, his only recourse is through appeal to the Commission; we should see if some improvement in the method of handling such cases after they go to the Commission can be brought about.

No General Rule I do not believe that any well informed traffic man, either industrial or railroad, is failing to try to reach agreements without reference to the Commission where differences of opinion rise. A great deal is accomplished through such procedure, but it would be worse than futile to attempt to lay down any general rule for guidance where such diversified problems are constantly arising as we find in the freight rate adjustment throughout the United States.

Boston Chamber of Commerce

The Boston Chamber of Commerce has long felt that, whenever possible, rate controversies should be settled by conference and cooperation on the part of those directly interested, and the Chamber's Transportation Bureau never neglects an opportunity either to practice such procedure itself, or to advocate it to others. The Chamber says:

Procedure The Boston Chamber of Commerce has no special set-up to aid in the informal settlement of rate controversies. * * * Whenever Chamber members, or others, bring to the attention of the Transportation Bureau rate situations which appear deserving of readjustment, an effort is made by the Bureau Manager to bring interested shippers and carriers together, with the hope that they can informally adjust their differences and, invariably, the Bureau participates in such conferences.

When general rate readjustments are at issue, the Chamber, acting through its Transportation Bureau, takes the initative in bringing together carrier and shipper representatives for a frank exchange of views and such cooperative effort as is possible. On occasions we have gone so far as to bring into conferences the railroad presidents and the executives of industries, but this procedure has not proved helpful.

Results Sufficient success has resulted from these get-together efforts to prove to us both the feasibility and desirability of such plans, but, generally speaking, our efforts have been rather discouraging; first, because of lack of appreciation by many of the benefits flowing from the settlement of such issues without the hostile influences that formal proceedings usually develop; and second, because of a mistaken impression on the part of some that cooperation means to agree with them, right or wrong.

Characteristics of Plan Our method of procedure is to first assure ourselves as to the merits of the proposal at issue through analysis of the facts. We next bring together outstanding traffic officials of the railroad, or railroads involved, and interested shipper representatives. * * * At such conferences all cards are laid on the table face up and we endeavor to impress upon all that the extent of our success depends upon a willingness to appreciate the other fellow's point of view. In other words, be prepared to "give and take," rather than simply "take," which, unfortunately, is some people's idea of cooperation and the real stumbling block that we encounter.

Common Conditions We look upon the conditions affecting the operation of this plan as common to all communities. * * * Our plan of procedure is simple and can readily be applied to any locality where a disposition to cooperate in such matters actually exists. As we see it, it is much more satisfactory to have the parties of direct interest in a rate controversy adjust their differences in an informal way than to take such matters before governmental agencies, where competitive interests will become involved and before one realizes it a major issue has been developed out of something which could and should have been settled locally. * * * However, profiting by our personal experiences, we believe that considerable missionary work must be done, particularly with the carriers, before this procedure becomes as popular as it deserves to be.

Rochester Chamber of Commerce

The Rochester Chamber of Commerce makes every effort to adjust its transportation problems by negotiation before it takes any formal action. The Chamber says:

Organization The Rochester Chamber of Commerce has not set up any special organization to deal with rate controversies. Such matters are handled in accordance with the established policies of the Chamber and by its Transportation Bureau. * * * Rochester has filed very few formal complaints with the Interstate Commerce Commission. The Chamber always follows the practice of giving the railroads an opportunity to adjust a problem before it takes formal action. Our procedure is much like that of other organizations representing communities. * * *

Procedure The Chamber has always endeavored to adjust its transportation problems by negotiation. In our efforts to adjust rate complaints which could not be settled by letter, we have made it a practice to arrange conferences between representatives of an industry and the railroads. When the matter is a general community problem, these conferences bring together executives of the Chamber and members of its transportation committee, on the one hand, and executives of the railroad chiefly involved, on the other hand, and the problem is fully discussed with the hope of reaching some solution of the question and avoiding a formal complaint. * * * Our procedure involves no elaborate method. The facts are presented first by letter. If the question cannot be satisfactorily settled in that way the conference usually brings out a full discussion of both sides of the case. If we have made a demand for a revision we endeavor to convince the carriers' representatives that they should grant the request. We are very careful to see that the demand is a meritorious one.

Results While service questions have usually been adjusted through conference, rate controversies have not responded as readily to that method. * * * Questions involving rates that affect an individual shipper can be dealt with successfully by negotiation, but the larger community rate problems are difficult of adjustment because of the present policies of the carriers. They have, however, justified the effort, cleared the atmosphere somewhat, and enabled us to determine upon a further course with a knowledge on both sides that all efforts at negotiation had failed. * * * Most chamber of commerce traffic men attempt to secure adjustment of all rate problems informally before filing formal complaints. The desire of the Interstate Commerce Commission that shippers and carriers get together and avoid a trial of controversy has led to what seems to be the general rule to first try negotiation. The carriers also expect a shipper, as a matter of fairness, to give them a chance to consider the problem before he proceeds formally. The National Industrial Traffic League through its committee operations and contacts with the railroads has followed this practice throughout its existence.

Common Conditions There are no conditions especially peculiar to our city in attempting to negotiate rate controversies. It is good business to try to avoid litigation and to attempt to settle these question through cooperative methods. Then too, we are most anxious to promote good feeling between our community and the railroads, and we believe we have succeeded fairly well in this. We only aim to prosecute a case when we are forced to do so. The carriers know then that we have a good reason for it.

New Bedford Board of Commerce

The Bureau of Transportation and Public Service of the New Bedford (Mass.) Board of Commerce has succeeded in negotiating for members of the Board many rate adjustments. The Bureau is, however, convinced that the New England carriers will have to come to a different attitude of mind before New England shippers can feel assured that their proposals for rate adjustments will receive considerate investigation and treatment.

The Bureau says:

Organization No special organization has been set up at New Bedford, Mass., to aid in the informal settlement of railroad rate controversies. This Bureau of the Board acts in all cases in behalf of the members thereof where such matters are brought to its attention.

Procedure Negotiations for the adjustment of rates are carried on by conference and correspondence with the officials of the freight traffic departments of the carriers involved. Requests for rate adjustments are supported by facts showing competitive influence, comparisons of rates on similar articles, etc. Many readjustments of rates have been obtained by this Bureau in behalf of local industries during the past ten years by use of this method.

Results Accomplished Adjustments of freight rates on many locally produced articles such as cordage, cotton goods, etc., from New Bedford to various points in the United States have been obtained which have placed those industries on a more relatively reasonable basis with competitors and have produced large freight costs savings. Such adjustments as we have obtained for our members were based on merit and not favor.

Characteristics of Plan Our method of handling rate adjustment matters is no different than that generally followed by any other commercial organization. We endeavor to support our request for rate adjustments in behalf of our members by submitting the same pertinent facts as are necessary to support a formal proceeding before the Commission.

Conditions Affecting Operation The conditions that might affect the operation of a particular plan of adjustment of disputes in these matters would very likely be common to all communities. * * * Railroad officials we have been forced to deal with openly in connection with such matters have never had the power to take any definite action therein or make any definite decisions with respect thereto. * * * The New England carriers have not shown any disposition to avoid settling rate controversies by formal action before going to the Interstate Commerce Commission and the time is still to come when shippers will feel assured that their rate proposals will receive considerate investigation and treatment. * * * While the time may be ripe for the establishment of some representative body composed of members from the railways and shippers, the New England railways will have to come to a different attitude of mind with respect thereto before that will be brought about.

Lincoln Chamber of Commerce

The Lincoln Chamber of Commerce reports that it always attempts to adjust disputes through conference and cooperation with the carriers; and that it has used this method successfully in many hundreds of cases. The Chamber says:

Conference We have always adhered to the proposition that rate controversies can be adjusted through conference with traffic representatives of carriers with better results, and with much better feeling existing following the adjustment than usually maintains as a result of formal complaints before rate regulation commissions.

Preparation When we find that our freight rates are not in the proper relationship with our competitors, it is our invariable practice to prepare proper exhibits, supported by the actual needs of shippers for the removal of prejudicial rates, and to present these individually or collectively to carriers as their interests appear. This refers both to freight and passenger rate adjustments.

Cooperation It would require too much space to give concrete illustrations of the favorable results accomplished by the Lincoln Chamber Transportation Department through our plan of conference and cooperation with carriers. In the 24 years the writer has been in charge of this work there have been hundreds upon hundreds of changes, favorable to the shipping interests not only of Lincoln, but of the State of Nebraska, obtained through this method.

Essential Characteristics The characteristics of this plan may be summed up in one brief paragraph: Integrity based on the actual need of readjustment of rates, plus common sense, plus the consideration of the carrier by giving opportunity to discuss the question with the proponents, plus an appreciation of the carriers' interests elsewhere, and above all the willingness to cooperate and, finally, to persevere.

There is nothing in connection with the plan under which we operate here in Lincoln that makes the conditions either (1) peculiar to our city or (2) inapplicable to any community. * * * It is largely a question of honest endeavor and integrity to bring about changes that are actually required for the preservation and development of the commercial interests of interested parties, which embraces shippers and carriers alike, and the removal of unfair transportation conditions, be they rates or service, should be considered of equal benefit to the shipping public and to interested carriers.

Houston Chamber of Commerce

The Houston Chamber of Commerce believes that the essential feature of any plan for informal settlement is personal contact. Therefore, in every case the Chamber tries to arrange for a joint conference between the shippers and carriers involved. The Chamber says:

Conference The Traffic Department of this Chamber in its organization, has for one of its purposes the informal handling of disputes between the shippers and the carriers in all matters of rate controversies and acts as an intermediary in bringing the contend-

ing parties together in many instances for a mutual adjustment of their differences.

The method of procedure usually followed by us, is direct conference between the shipper and the traffic or operating heads of the interested lines, which at times results in rather elaborate conferences wherein a large number of shippers and rail carriers are involved in the controversy. We also appear before the various Traffic Committees and rate-making bodies of the carriers in support of any contenders for or against any changes proposed by the rail lines and at times are accompanied to these conferences by individual shippers.

Through these results we have, in many instances, shown the carriers the necessity of certain revisions in rates, regulations or operating conditions which are beneficial to both the shipper and the carrier; specific instances are many and varied. The revisions in rates have at times increased tonnage of the carriers and permitted a greater movement of traffic from and to Houston merchants, as well as certain revisions in train schedules, movement of package cars, etc., and have been of great benefit to both the carriers and shipping public.

Personal Contact The rail carriers, in connection with their rate-making bureaus, hold conferences with the shippers in this territory relative to any proposed changes in rates or regulations affecting the shipping public. In connection with these conferences of the carriers, it is of course essential that the shippers' representative present the carriers with full information relative to any subject in which he has any interest. This is a joint conference arrangement. The essential feature of the plan followed by us is, of course, the personal contact of shipper and carrier which we endeavor at all times to engineer, * * * we consider anything in connection with this particular plan that will aid in mutual understanding of the problem of both the shipper and the carrier to be essential, and naturally all of them are desirable.

This personal contact plan, as followed by us, is of peculiar operation in this particular city, because of the fact that all of the rail lines serving this community, with the exception of one, maintain their general traffic and operating offices here. The one exception, the Santa Fe has its general offices only fifty miles away and they are readily accessible to us. Through this means we can and do with the shipper reach executive authority with very little trouble. This condition is not true in a large number of other points, necessitating other communities resorting to the expedient of conducting their negotiations with the carriers in a great many instances by correspondence, which is far from satisfactory.

Memphis Freight Bureau

The Memphis Freight Bureau finds that with few exceptions it is possible to secure satisfactory rate adjustments by direct negotiations with the carriers. The Bureau says:

Direct Negotiations The Memphis Freight Bureau was organized by Memphis shippers and receivers of freight in 1895, and has since been in continuous operation. Its object is to secure the publication and maintenance of reasonable rates, rules, etc. for the handling of freight in and out of Memphis by rail and water, adjustment of claims and all other transportation matters. * * * The Bureau has standing committees, which with the Commission handle all important questions with carriers by correspondence and conference. No appeal to the Interstate Commerce Commission is made

until authorized by its Board of Directors after every effort has been made to adjust differences with the carriers.

With few exceptions, satisfactory adjustments are secured by direct negotiations with the carriers and much time and money saved as compared to results from formal complaints to the Commission.

We believe that after a shipper acting either individually or through some agency has failed to secure satisfaction of complaint by direct appeal to the carriers he has a more sympathetic consideration by the Commission in the conduct of his complaint.

Common Conditions We believe that this plan is applicable to all persons, corporations and communities. What Memphis seeks and strives to secure is not peculiar, but universal, i. e., rates fairly equal with competing markets. Memphis appreciates very highly the privilege of taking its cause, when necessary to an impartial and competent arbitrator such as the Interstate Commerce Commission.

Some Other Representative Chambers

The replies received from the Chambers of Commerce in Cleveland, Indianapolis, San Francisco and Denver will serve to illustrate further the procedure followed by representative chambers in the informal settlement of rate controversies.

The Cleveland Chamber of Commerce says:

Direct Negotiation There is no special form of organization calculated to effect the informal settlement of rate controversies in Cleveland, but we regard that as one of the regular functions of the Transportation Department of this Chamber. When such matters come to our attention, we first study the surrounding circumstances to the best of our ability to determine whether or not there is such a mal-adjustment as would appear to justify a rate change. If there is, we then negotiate directly with the carriers involved or with the carriers through such organizations as the Central Freight Association. In case of failure we then recommend to the shipper such action as may appear proper, or, in cases where the general interests of the city are involved, we proceed before the proper commission.

The Indianapolis Chamber of Commerce says:

Procedure Our plan of procedure is simple and is aimed to reduce the time consumed and the expense to a minimum. We act in an advisory way only, having no pecuniary interests in any rate matters. Propositions affecting the city at large or involving a policy are submitted to our Traffic Division Committee—propositions peculiar to a specific industry are handled directly by the Traffic Commissioner.

All pertinent data is drawn up and submitted to our local railroad committee. A conference is had—that committee sends the proposition with recommendation to the carriers' general committee. The matter is docketed and if shipper desires to be heard such hearing is arranged for. This is the plan prescribed by the carriers, and we conform to it. * * * In our opinion only a very small proportion of rate controversies can be satisfactorily adjusted by conference but all our proposals are first submitted to the carriers before any thought is given to appealing to the Commission.

The San Francisco Chamber of Commerce says:

Although the San Francisco Chamber of Commerce has no special committee to handle this work, the Traffic Department does all possible to assist San Francisco interests in settling all rate controversies brought to our attention. * * * We also inform our members of rate changes proposed by the Trans-Continental Freight Bureau, assist them in placing their cases before the rate committee, and notify carriers represented at these hearings of our position in each individual case. The general conditions are similar to those of other Pacific Coast ports.

The Denver Chamber of Commerce says:

Correspondence Upon only a very limited number of occasions have we found it necessary to take up controversial matters relative to transportation rates before the Interstate Commerce Commission. Our method of procedure is to handle through correspondence with the various traffic departments of our railroads and through railroad rate committees the settlement of our problems. * * * This method of handling rate matters informally with the carriers has produced very satisfactory results. * * * The essential features of the plan are, first, that our proposal is sound; second, that it will move or prohibit the movement of traffic, and third that it shall be equable as between the carriers and the shippers. * * * Our methods are not peculiar to Denver but are common to many other communities, and especially those communities that are in competition with Denver business.

Chapter VI—Traffic Bureaus (Continued)

EACH chamber of commerce traffic bureau must of necessity adapt its form of organization to local conditions. The following paragraphs illustrate this statement. They show that while in the 11 cities quoted the traffic bureaus have a common purpose, they have set up a great variety of forms of organization in their effort to make this purpose effective. Some confine their activities chiefly to the city in which they are located; others are state-wide in their scope, and still others take a permanent part in regional or national activities.

Kansas City Chamber of Commerce

The Kansas City Chamber of Commerce says:

Organization This is an important part of our work and we generally have a number of such matters in progress all the time. I am referring now to matters affecting Kansas City and its shippers. * * * The machinery used is the staff of the Transportation Department of this Chamber, our committees and special committees of interested shippers.

Flint Chamber of Commerce

The Flint, Mich., Chamber of Commerce has a Traffic-Transportation Committee composed of one retailer, one wholesaler, one steel manufacturer, and two traffic managers. The Flint Chamber says:

Organization We have had for the past ten years a Traffic and Transportation Committee of the Chamber of Commerce to whom this department may look for advice and guidance in any controversies regarding new or proposed legislation or rate adjustments. The Traffic and Transportation Committee has in its membership the traffic managers of two of the largest motor industries, also one representative of the retail interests, one representative of the wholesale interests and one representative of the steel interests.

Procedure It has been the practice of this department to obtain the advice of this committee before any action is taken concerning any legislative matters directly pertaining to transportation or rate controversies. It has at all times been the policy of this department to attempt to adjust all such controversies informally when possible, and it is our opinion that more has been accomplished through this medium than could have been obtained through litigation directed against the carriers.

Results It has been possible to have this city placed upon the same basis as other cities in this vicinity in the application of commodity rates to and from this locality, and also through the medium of several conferences with the carriers transit privileges in the fabricating of steel, milling in transit of grain and storage in transit of eggs was accorded the shippers in this city. * * * While this procedure has made the majority of the instances a success there have, of course, arisen several questions in which the carriers have been asked to depart from long established practices, at which time it has been necessary to enlist the support of the Interstate Commerce Commission or the State Railway Commission.

Common Conditions The principles of traffic as pertaining to the particular needs of this city in no way differ from other cities in Michigan or the United States, and a remedy which would benefit Flint should benefit any city similarly discriminated against, with the possible exception that Flint does not directly feel the effects of water competition and such competition does not enter into the construction of rates to and from Flint.

Los Angeles Chamber of Commerce

The Los Angeles Chamber of Commerce describes the several ways in which its Traffic Department carries on this work, and points out that the greater part of its accomplishments have been through the medium of cooperation. The Chamber says:

Organization We have no separate organization to carry on this work; that is, separate from the general work of the Traffic Department. There are however, several ways in which this work is carried on:

1. We have a standing committee—Transportation Highways Committee—in which all of the railroads entering Los Angeles are repre-

sented. Discussions of problems affecting our community generally are handled there.

2. We have also an Iron and Steel Traffic Committee which specializes in matters relating to the iron and steel industry. This committee functions in the same manner as our Transportation Highways Committee.

3. Matters affecting individuals or small groups of individuals are handled by conferences between the carriers and the group, or by correspondence. Most of our negotiations are carried on by the latter method.

4. There is also in Los Angeles a group of men known as the Los Angeles Traffic Managers' Conference. Meetings of this organization are held in the Chamber of Commerce and the Traffic Manager of the Chamber is a member of this organization, acting in an advisory capacity and cooperating with them for the good of the community.

Cooperation By far the greater bulk of our accomplishments has been through the medium of cooperation. For example, we have filed only one formal complaint with constituted commissions, and we have sought the suspension of some four or five publications within a period of five years. A concrete illustration of what has been accomplished by this method of cooperation is reflected in the improved schedule of the transcontinental passenger trains. The fastest trains between Chicago and Los Angeles formerly required 3 nights and 2¾ days. That is, the arrival time of the trains was from 2:30 to 3:00 o'clock in the afternoon. Following the many conferences, the railroads cut this time down so that the arrival is now effected at 9:00 a. m., requiring 3 nights and 2 days of travel. Since this has been accomplished a further reduction on the extra fare trains has been made so that now the trip may be made between Chicago and Los Angeles with 2 nights and 2½ days intervening.

Procedure Our negotiations are carried on by correspondence, due to the fact that primarily they are protests against reductions in rates. * * * We exhaust every means possible for an amicable settlement of these matters before applying to the constituted commissions for adjudication. * * * I believe this practice is very generally followed by the Chambers of Commerce throughout the United States.

Jacksonville Traffic Bureau, Inc.

The Jacksonville Traffic Bureau, Inc., is in a somewhat unusual sense a community organization, since it is maintained by joint action of the Jacksonville Chamber of Commerce and the City of Jacksonville. The Bureau says:

Organization This Bureau is an organization set up by the Jacksonville Chamber of Commerce and the municipality of Jacksonville for assistance to the business interests of Jacksonville in the settlement of rate controversies. The Board of Governors consists of eleven men, five appointed by the Chamber of Commerce, five by the City of Jacksonville. These ten men select the eleventh member. Outside of the Board of Governors the organization consists of a commerce attorney, a manager and a rate and tariff department.

Informal Negotiations In all rate problems affecting the business interests of Jacksonville we always attempt informal negotiations with the individual carriers in the settlement of any problem necessary to retain or create business in and through Jacksonville. That is to say when we can discover or have brought to our

attention any particular rate problem which needs correction we apply direct to the traffic officials of the interested carriers asking for correction or change in the rates which we think would be necessary for Jacksonville. Before making an application to the carriers we make an analysis of the present and suggested changes in the rates to and from Jacksonville and other points with which we compete. In other words, before entering into negotiations with the carriers we first convince ourselves of the merits of any particular changes in rates desired before undertaking to convince the carriers themselves.

Results Through the methods described we have been able to bring about particularly better ocean rates on lumber to retain the present gathering rates for concentration at Jacksonville on naval stores; desirable switching rates and arrangements at our water front docks; transit arrangements on fruits; rates on imported coffee which have built up the port; and many other beneficial changes in rates which have tended to preserve our manufacturing interests and the development of import and export traffic.

Essential Features The essential features of such a plan are, in my opinion, a complete analysis of our rate problems and the fact that we always try and do give the carriers complete information as assembled by us before the negotiations are started. * * * There is nothing peculiar in the operation of this Bureau or the plans on which it is conducted which cannot, in our opinion be carried out in any city or community throughout the country.

Norfolk-Portsmouth Freight Tariff Commission

The cities of Norfolk and Portsmouth, Va., in cooperation with the Norfolk-Portsmouth Chamber of Commerce have joined in creating a Freight Traffic Commission to protect the traffic interests of those communities. The Commission says:

Organization In 1922 the cities of Norfolk and Portsmouth, and the Norfolk-Portsmouth Chamber of Commerce created the Norfolk-Portsmouth Freight Traffic Commission for the purpose of protecting the interests of those communities from a freight rate standpoint. A commission of nine men was appointed which in turn set up a working organization with a Traffic Commissioner in charge.

Procedure Before appealing formally to the Interstate Commerce Commission it has been our practice to bring all complaints to the attention of the traffic officials of the interested carriers. While some measure of success has attended these efforts, as a general proposition we have not been successful and have often found it necessary to seek the aid of either the Federal or State rate regulatory authorities. * * * We believe that many disputes which now go to the Interstate Commerce Commission, as well as to the various State Commissions, could be ironed out if representatives of the carriers and shippers could find a way of meeting and discussing their problems in person. However, with officials of various railroads serving Norfolk so widely scattered, it is difficult for us to handle matters in this way. It has, therefore, been necessary in the majority of instances to resort to correspondence which has not generally proven satisfactory, although in some instances desired adjustments have been secured.

Traffic Club We also have a local Traffic Club which has performed one all important function, i.e., bringing representatives of railroads and shippers more closely together, thereby making them better acquainted with each other, and in this way affording each a better understanding of the viewpoint of the other. This has been of considerable advantage to both the railroads and the shippers.

New Orleans Joint Traffic Bureau

The New Orleans Joint Traffic Bureau represents eight public and private organizations in all of their dealings with rail, water and highway carriers, and in the informal settlement of railroad rate controversies. The Bureau says:

Membership The Joint Traffic Bureau acts as traffic representative of the following organizations:

New Orleans Board of Trade, Ltd.
New Orleans Cotton Exchange
New Orleans Association of Commerce
Board of Commissioners of the Port of New Orleans
Public Belt R. R. of the City of New Orleans
Louisiana Sugar and Rice Exchange
New Orleans Steamship Association
American Sugar Cane League of the U. S. A.

It represents these organizations and their members in dealings with railroad, steamship and steamboat lines, and operators of motor trucks and passenger buses. * * * It has been the policy of this Bureau to avoid litigation until all efforts toward amicable settlement of differences have been exhausted.

Commercial Affairs Committee We have no organization in New Orleans and none in the South of which I am advised, that acts as an arbitrator of differences between commercial and carrier interests. Recently, however, in order to get a greater perspective of our commercial conditions in the City and Port of New Orleans there has been organized, under the direction of the State of Louisiana, a committee known as the Commercial Affairs Committee, which has a subsidiary committee known as the Investigating Committee comprising about 27 members, each of whom is representative of a certain group interest, i. e., Cotton, Grain, Coffee, Rice, Steamships, Steamboats, Railroads, etc.

Investigating Committee Each member of the Investigating Committee is Chairman of a committee within that group which he represents. It is the duty of the chairman of each group interest to develop through his group committee matters which in any way interfere with the fullest possible development of the specific group interests. * * * Where a complaint is registered it is brought forth in the Investigating Committee, investigation made, discussion had and action taken as to what can best be done to correct the situation complained of. * * * It frequently happens that one group will complain of practices on the part of another group as interfering with the development of business. The matters are all threshed out and to the extent that it can be done amicably and through conference the differences are corrected. Where correction can not be accomplished amicably report is made to the Commercial

Affairs Committee which determines policy and directs the further procedure.

Insofar as I know there is no organization that so nearly approaches the medium for determination of differences involving rate, terminal and other problems without litigation as does the Commercial Affairs Committee, and its subsidiary organization the Investigating Committee.

Montgomery Chamber of Commerce

The Traffic Department of the Montgomery Chamber of Commerce acts as Traffic Manager for six organizations—two that are city-wide, three that are state-wide, and one that is regional in its scope. The Chamber says:

Organization The Transportation Bureau of the Montgomery Chamber of Commerce was established for the purpose of aiding Montgomery shippers and receivers of freight in securing equitable and non-discriminatory transportation rates, charges and facilities. From time to time since this department of the Chamber of Commerce was established other organizations of shippers have affiliated with the Bureau until today we are the traffic departments of the following organizations in addition to the Montgomery Chamber of Commerce.

Alabama Farm Bureau Federation
Alabama Cotton Seed Crushers' Association
Gulf Coast Citrus Exchange
Montgomery Live Stock Exchange
Montgomery Cotton Exchange

Our Bureau thus represents a diversified interest embracing the entire state of Alabama. This being true we have an interest in practically all freight rates in the South as well as from and to other competing sections.

Procedure Representing, as we do, manufacturers, merchants, farmers, jobbers and distributors we have many calls made upon us to redress a variety of real and fancied wrongs. As these problems are presented to us we carefully analyze them. Those without merit as well as those with some degree of merit, but incapable of being solved at any time within the near future, are disposed of without our having to handle them with the carriers. Those with merit and of a local character which are susceptible of prompt adjustment are handled by correspondence with the traffic officer of the interested railroad or railroads, and all facts as well as arguments are submitted which support the conclusion that relief should be granted. In practically 100% of such instances the carriers express a willingness to grant the necessary relief. This reduces the remaining problems to a comparatively small number but important. They consist of rate adjustments, involving somewhat the general adjustment. Necessarily these are the ones that give the carriers the most concern, and about which the dictates of self-interest largely control.

Results We have set up no particular organization, other than the Bureau itself, to aid in the informal settlement of rate controversies. The procedure which we follow has been outlined. Since we handle with the carriers daily questions that we could bring to the attention of the Commission, but dispose of informally with the carriers, concrete illustrations would simply be every day occur-

rences. Our plan has proven so successful that we do not understand why the same method or plan is not followed elsewhere. The situation presents no problem of a complex nature. We simply employ business methods in a common sense way as we conceive them to be. I believe I am safe in saying that 99% of all local rate or traffic problems are settled informally between the carriers and ourselves without resort to litigation. On the other hand, 100% of the general rate revisions, which bear upon the rate situation in general ultimately find their way to the Commission for adjudication.

Utah Shippers Traffic Association

The Salt Lake City Chamber of Commerce does not maintain a separate Traffic Bureau, but acts through the Utah Shippers' Traffic Association, which is maintained for the purpose of securing equitable rates for shippers throughout the State of Utah. The Association says:

Organization This Association was organized for the purpose of securing equitable rates for the shippers of the State of Utah. The organization is handled through a Board of Directors who in turn elect officers and employ necessary help. At the present time, in addition to having an Executive Secretary, the organization employs the Traffic Service Bureau of Utah on a retainer basis and for the handling of specific rate cases. The President is empowered to appoint special committees to meet with the carriers to discuss rate problems.

Procedure Our procedure is to request the carriers to make the necessary revisions in their tariff rates thereby removing discriminations. If no favorable action is taken by the carrier, a formal or informal complaint is filed with the Interstate Commerce Commission or State Commission. * * * We feel that the handling of rate questions through a committee of shippers and representatives of the carriers, would be an ideal method that would remove a lot of the work of the Interstate Commerce Commission and save a large amount of funds to the shippers. However, we have not been successful in securing the cooperation of the carriers in our efforts to secure rate adjustments. We, therefore, feel that the only method by which we can obtain an equalization of freight rates is by filing the necessary complaints.

San Antonio Chamber of Commerce

The Chamber of Commerce of San Antonio, Tex., reports that in addition to dealing with local rate questions through local rate committees, it participates in the work of the Texas Industrial Traffic League, which handles traffic matters throughout the state, and the Southwestern Industrial Traffic League, which performs a similar function for the entire Southwestern region. The Chamber says:

Scope of Work The questions discussed from time to time involve not only rate matters but train schedules, arrangements for loading merchandise, claims, private or industry track matters and in fact every feature connected with the railroads affecting the shipping public. This, of course, refers only to the local situation. For the handling of state-wide matters, we have the Texas Industrial Traffic League which endeavors on such broader matters to reach conclusions in the same way as we do locally. And for the Southwest we have the Southwestern Industrial Traffic League which operates on the same principles as we do locally and as does the Texas Industrial Traffic League.

After operating along the lines indicated for a number of years, we have found the results more satisfactory than could possibly have been expected had the plan of rushing into formal litigation been employed. The carriers understand that reasonableness is one of our principles and that they may, and do, discuss with us any details in the fullest confidence. I know of no conditions peculiar to San Antonio that do not or may not obtain at least to a very great extent in any other city of the same class particularly in the Southwest.

Texas Industrial Traffic League

The Texas Industrial Traffic League with headquarters at Dallas includes in its membership traffic representatives of chambers of commerce and large industrial concerns throughout the State of Texas. The League says:

Organization The Texas Industrial Traffic League is a non-profit corporation composed of chambers of commerce and the larger industrial concerns from all sections of the State of Texas. Its policies are controlled entirely by chamber of commerce representatives and it, of course, is able to bring about agreements between shippers and railroads in certain cases because of the fact that the League speaks for all shippers in the state. Those agreements are reached through conferences between committees representing the railroads and the League.

Procedure The procedure followed is to discuss the matter first at League meetings and arrive at our own policy. Committees are then appointed to confer with the railroads and attempt to get them to agree with our policy. Sometimes compromise agreements are made subject to approval of the railroads and the League. * * * There are no special characteristics of our plan of operation. This plan depends entirely upon the application of common sense and frank and open dealing between the committees representing the carriers and our organization. The conditions which exist in this state are common to all sections of the United States and all cities.

Minneapolis Traffic Club

In Minneapolis four organizations cooperate in providing for the informal settlement of railroad rate controversies, viz: the Minneapolis Traffic Club, the Minneapolis Traffic Association, the Minneapolis Civic and Commerce Association, and the Chamber of Commerce of Minneapolis. The Traffic Club says:

Organization At Minneapolis, we have a Traffic Club whose membership comprises some 550 men who are engaged in the railroad business or some industrial activity. * * * Within the Traffic Club there are several sub-organizations—for instance, one that is called the Grain and Milling Division. * * * Mem-

bership in this Division is confined to traffic managers or executives who are members of the Traffic Club and are engaged in the grain and milling trade at Minneapolis.

Procedure The Grain and Milling Division meets every Friday. * * * At each meeting a docket is presented by the chairman on which are listed under the subject numbers various matters relating to transportation which have been brought to his attention. In the event it is decided that the matter is one which could be satisfactorily disposed of by conferring with carriers' representatives, a committee of three or more is appointed by the chair with instructions to confer with the carriers' representatives and report the result at the following meeting. In the event the committee is unable to accomplish the desired results, the matter is then referred to the Traffic Association of the Minneapolis Chamber of Commerce with any recommendations that the Division may have to suggest.

Auxiliary Committee The matter is then presented by the Director of Traffic of the Minneapolis Chamber of Commerce to an Auxiliary Committee. This Auxiliary Committee is composed of shippers' representatives, who are selected as being representatives of the industries in Minneapolis. Meetings of the Auxiliary Committee are conducted along much the same line as the meetings of the Grain and Milling Division—the only difference being that instead of meeting each week or semi-monthly, they are held as frequently as is made necessary by the accumulation of matters to be considered. If the Auxiliary Committee decides that a conference between its members and carriers' representatives may accomplish the desired results, a meeting is arranged, at which the matter under discussion is presented for solution. * * * This is what the traffic men in this community are doing in a cooperative way to effect prompt settlement of the many transportation controversies. The machinery we have set up seems to function very efficiently and has brought results in the quickest way with minimum effort.

Southern Pine Association

The traffic departments of some trade associations also regard the informal settlement of railroad controversies as one of their most important functions. For example, the Southern Pine Association reports that it never attacks freight rates before federal or state agencies unless negotiations with the carriers have previously been undertaken without avail. The Association says:

Organization The Southern Pine Association represents about 33⅓% (by volume of production) of the manufacturers of yellow pine lumber operating in the states of Arkansas, Oklahoma, Texas, Louisiana, Mississippi, Alabama and Florida. The Transportation and Traffic Department constitutes one of the most important branches of its work. The personnel thereof consists of a manager and an adequate corps of assistants. Its work is directly under the supervision of a Transportation and Traffic Committee. Its activities are sub-divided into two phases:

Firstly, the securing of adequate transportation for its subscribers and,

Secondly, preventing the assessment by carriers of freight charges in excess of what the product will bear.

In the interest of carriers as well as the subscribers, freight rates should not be excessive for the freight rate, more than any single element of cost, determines the limit of markets. Should Southern Pine markets be circumscribed by abortive freight rates, the industry will receive no orders therefrom and the carriers will not transport any of its product thereto.

Transportation and Traffic Committees The Transportation and Traffic Committee consists of 28 representatives of the Association's subscribers located in the several states embraced within its radius. These committeemen represent the executive, sales and traffic divisions of the lumber companies. The committee of the whole meets semi-annually or more often if necessary. During the interim sub-committees are clothed with full power to act, and of these there are three, viz: the Southeast, Mississippi Valley and Southwest Sub-Committees, the personnel thereof being selected from among members of the Transportation and Traffic Committee proper who operate in the respective sections named.

General matters of policy are laid down by the Transportation and Traffic Committee of the whole which may not be deviated from in any major sense by the sub-committees. Such policies when once established remain fixed until changed or amended by the Transportation and Traffic Committee of the whole.

Shippers Advisory Boards When the carriers conducted a general house-cleaning touching transportation service and inaugurated the Advisory Boards, the cooperation accorded them by this Department in the South is a matter of history. The results of the entire movement reveal themselves in unprecedented efficiency in transportation service, not only to this industry but to the shippers at large. An important by-product of the concerted action by carriers and shippers in this respect is a healthy state of public opinion towards the transportation machine, and faith in railroad securities on the part of investors.

Procedure No action is taken by the Department contemplating the opening of negotiations for reductions, or the attacking of any Southern lumber freight rates before the duly constituted regulatory bodies, except on direct instructions of the committee of the whole or its sub-committees. Freight rates are never attacked before Federal or State agencies unless negotiations with the carriers have been previously undertaken without avail. The Traffic Department is invested solely with authority to seek suspensions, but wherever possible the sub-committee having jurisdiction is first advised of such intention and their approval received.

In negotiations the traffic manager presents the problem. He is always accompanied at joint conferences by the proper sub-committee who participate in the presentation, and this that it may be clearly manifest to the carriers in each instance, that the proceedings do not grow out of a desire on the part of an Association employee to justify his own existence by securing freight rate reduction, but rather that the same are necessary in the interest of the carriers as well as the industry. Ordinarily three or more joint conferences extending over a period of one year to eighteen months ensue before an adjustment is negotiated and published.

Complete Data Presented The Department presents exhibits touching not only the needs of the industry, but likewise the unreasonableness per se of the rates involved. This effort is as full and complete as though a formal hearing was being conducted before a duly constituted regulating body. Such might be considered a premature exposure of the cards held, but the desire is

that if not correct or persuasive the facts should be adduced in conference. If unassailed, their merits endure for later hearing and the case presented possesses the additional virtue of having been in the hands of carriers and checked thereby previous to formal hearings. Hence, the compromise, when and if offered and accepted, reflects in major aspects the conservative nature of the Association's basic policy rather than a conviction that the original requests were unreasonable.

Formal Proceedings Sometimes Inevitable It not infrequently happens that with the chief executives of the carriers looking to the traffic officers for revenues, the latter are timid lest they be charged with "giving away the railroads." In this event, formal procedure invariably follows. Then the trade association deals before the regulating body with the legal and technical traffic experts of the carriers and the proceedings resolve themselves into a long drawn out contest. Such instances are regrettable not only because the mutual interests of the carriers and shippers involved suffer, but quite often the cordial relationships between the industry and the carriers are seriously ruffled in the course of such proceeding particularly should the inviolate sanctity of prior voluntary conferences be not respected as sometimes happens.

Cooperation of Chief Executives Necessary We believe that the present practice of handling freight rate adjustments by conference rather than by trial can be materially extended and improved. No appreciable strides, in our opinion, can be made in this direction, however, until the chief executives of the carriers have first seriously considered the matter among themselves and firmly determined that there shall be such improvement just as they did in the case of transportation prior to the establishment of the Advisory Boards. In the light of such firm determination, they will then first clean house, adopt a general policy in opposition to printed rates which do not move traffic which they should haul, and either revamp existing agencies or establish new agencies to accomplish the end in view.

Advantages to Be Gained An immediate response and cooperation in an advisory capacity will spontaneously spring from their patrons. Ordinarily negotiations should be completed at one conference—at the utmost, two. Ninety days time is quite adequate for the definite settlement of such, and sixty additional days for tariff publication of the readjustment. In this respect, at least, there is vast opportunity open to the carriers to further harvest favorable public opinion, and simultaneously augment their aggregate revenues with a more consistent economic distribution of the nation's products, the benefits from the whole flowing to the public at large.

Chapter VII—Traffic Bureaus (Continued)

ALMOST every local chamber that replied to our inquiry made some reference to the value of informal methods in preventing the filing of formal complaints that frequently result in prolonged litigation before the Commission.

Omaha Chamber of Commerce

The Omaha Chamber of Commerce acts as a clearing house for the settlement of rate and other transportation

controversies. Both shippers and carriers seek the cooperation of the Chamber in their efforts to obtain rate changes without litigation. The Chamber says:

Organization The policies of the Omaha Chamber of Commerce Traffic Bureau are directed by a governing committee consisting of executive heads of representative lines of industry in Omaha having a direct and keen interest in transportation matters as receivers and shippers of freight. This Committee is appointed annually by the Chairman of the Executive Committee of the Chamber of Commerce from a selected list. It assumes entire responsibility for directing the transportation policies of the Chamber of Commerce, and the operation of the Traffic Bureau in the interest of the city and its individual shippers, subject to the approval of the Executive Committee of the Chamber if the adopted policies are challenged. * * * The Governing Committee employs a manager of the Traffic Bureau, who is responsible to the Governing Committee for the Bureau's successful operation.

The Traffic Bureau acts as a clearing house for the settlement of rates and other transportation controversies here. Members of the organization submit such matters to us and by that means we are able to head off complaints without merit, and if meritorious, they are informally negotiated with the carriers. In this way formal complaints are avoided in all instances where settlement is possible through informal handling.

Negotiation When action is needed in behalf of an Omaha shipper or the city as a whole in transportation matters, the Traffic Bureau starts negotiations immediately with the interested carriers unless instructions of the Governing Committee are first required on matters of policy, in which event action by the Governing Committee is first obtained. The method of handling the subject is by correspondence or conference with the railroad rate or classification committee, or railroad officials competent to act upon it, or by calling a special meeting of representatives of the carriers concerned. If the subject affects other communities and cooperative action is desired, this is obtained by communicating with the transportation bureaus of chambers of commerce in the other cities affected. Negotiations frequently lead to settlement.

Cooperation It is the practice of the carriers and other public utilities also when they are seeking changes in rates, tariffs, or other practices affecting Omaha, to seek the cooperation of the Traffic Bureau in settling these changes without litigation or disatisfaction on the part of their patrons. These matters are handled with interested members of the Bureau in the same manner as if the subject originated with the shipper. * * * A great many instances could be cited of successful informal handling of matters which otherwise would have resulted in formal complaints. * * * Our plan of operation or something similar can be used in any community where industries generally speaking are in need of individual traffic assistance from a central organization which also looks after the transportation interests of the entire community.

Philadelphia Chamber of Commerce

The Philadelphia Chamber of Commerce believes that through greater use of informal methods it would be pos-

sible to avoid a large part of the present volume of rate litigation before the Commission. The Chamber says:

Informal Procedure Informal procedure and conferences between individual shippers and railroad traffic representatives aid materially in expediting the adjustment of rates and, at the same time, greatly relieve the burden placed on the Interstate Commerce Commission. * * * Many rate adjustments are now handled in a cooperative manner with officials of the interested carriers and through them with the proper freight associations; and many others could be adjusted by informal conferences between shippers and carriers thus avoiding a large part of the present volume of litigation before the Commission.

Conditions in different sections of the United States are not so dissimilar as to require separate methods. It would be possible for any commercial organization to create a similar plan of informal settlement of rate controversies and thus eliminate litigation before regulatory bodies.

Cincinnati Chamber of Commerce

The Cincinnati Chamber of Commerce believes, on the other hand, that it would be extremely difficult to materially reduce the number of complaints now filed with the Commission. The Chamber says:

Conference So far as this Department is concerned conference is always had—in fact, many of them before appeal to the Interstate Commerce Commission. * * * We have in some instances been able to work out a solution of the difficulty without resort to the Commission, but it has generally been where the attainment of the end was obviously of mutual benefit. * * * Where conferences have been held with the railroads with regard to unreasonable rates or matters of prejudice and preference upon which no agreement can be reached, appeal to the Commission is inevitable.

It seems to me, however, that it would be extremely difficult to get up any machinery to entirely eliminate or materially reduce complaints before the Commission by conferences such as have been suggested. It would be preferable to me, as it should be to others in the traffic game, to settle differences by conference, rather than the unavoidable lengthy procedure before the federal body.

Oklahoma City Chamber of Commerce

The Chamber of Commerce in Oklahoma City reports that its efforts to secure adjustments through the Standing Rate Committees have had very little effect, and that it is usually necessary to handle rate adjustments by filing formal complaints. The Chamber says:

Rate Interpretation This Department has a very complete file of tariffs from which we quote rates to anyone inquiring whether members of the Oklahoma City Chamber of Commerce or not. We also assist anyone in making informal adjustments with carriers on shipments which we find to be overcharged. * * * We have no trouble whatever with carriers insofar as questions of proper interpretation of rates is concerned, but we do have considerable difficulty in securing voluntary adjustments on proposals submitted by this Department to the carriers through the Southwestern Freight Bureau.

Standing Rate Committee That Bureau is composed of representatives of various railroads in the southwest to whom informal transportation propositions are submitted for consideration and final action. * * * We now have problems before them which were submitted approximately a year ago, to which they are still giving consideration and possibly will be doing so for some time to come. * * * We have had many similar experiences, and it is our belief that it is necessary in the majority of rate adjustments to file formal complaint with the Interstate Commerce Commission on interstate traffic and our State Commission on intrastate traffic.

Formal Complaints Necessary Our efforts to secure informal adjustments through that body have had very little effect, particularly following the decision by the Interstate Commerce Commission in Docket 13535, *Consolidated Southwestern Cases.* A great number of commodities were not specifically treated in that decision, and it will be necessary for the Commission to give further consideration to them. Pending conferences between carriers and shippers before that body the carriers do not desire to take any individual action; and rates on commodities not specifically treated in the decision are placed in a frozen condition. * * * Therefore, it is necessary at the present time to handle rate adjustments either with the Interstate Commerce Commission or with the State Commission by filing formal complaints.

Seattle Chamber of Commerce

The Seattle Chamber of Commerce believes that nearly all rate controversies can and should be settled by informal methods. The Chamber points out, however, that many formal complaints are now filed by independent traffic bureaus that promote litigation in an effort to justify their own existence. The Chamber says:

Informal Settlement It has been our observation for some years past that the larger chambers usually settle their differences with the railroads over the conference table and seldom are obliged to resort to the intervention of the Interstate Commerce Commission. * * * We are in full sympathy with what you are endeavoring to do. Still there is some doubt in our minds as to whether or not the Interstate Commerce Commission would be relieved of much of its burden if our efforts are to be confined to Traffic Bureaus of chambers of commerce and other similar bureaus. * * * Generally it is the independent Traffic Bureaus who in their own name or the names of firms on whom they depend for their main support jump to the Commission on the most trivial occasion in an effort to justify their existence. What we have accomplished other chambers of commerce can likewise accomplish. I am aware of no conditions peculiar to our situation or uncommon to other cities of equal importance.

Other Representative Chambers

Other representative chambers of commerce have expressed their views with equal frankness. Some believe that

it will be difficult to reduce the total amount of litigation, but the great majority report that they have had a considerable degree of success in the use of informal methods of settlement.

In discussing the relation of private traffic bureaus to this problem one traffic manager says:

Independent Traffic Bureaus

Commerce attorneys are clandestinely active in many of these traffic organizations and chiefly responsible for the vast amount of litigation. It is their bread and butter to start with and they soon reach the luxury class if they can build up enough cases to carry to the Commission. * * * Still another type and perhaps the most mischievous of all those who clutter up the machinery of the Commission, is the inexperienced clerk who has been given the title of Traffic Manager for some concern, but knows little or nothing about the fundamentals of rate making.

In one manufacturing city of over 100,000 inhabitants the chamber says:

Voluntary Settlement

The traffic manager of this chamber is a commerce attorney and was connected for many years with the Interstate Commerce Commission at Washington. He has always followed the practice of endeavoring to obtain a voluntary settlement of all rate adjustment matters that have been submitted to him for handling by the members of this organization. Those rate adjustments have always been based on the same meritorious facts as are usually given consideration by the federal regulatory body. Regardless of this practice on his part, there are ofttimes occasions when it is necessary for him to file formal complaints before the Commission to obtain justice and satisfactory action.

We believe that there is a future possibility of working out a solution to our problems and we hope soon. It is a question of proper consideration of each side's views on a particular problem as well as cooperative action and spirit.

The Buffalo Chamber of Commerce says:

Our work for our members is carried on in practically every case through negotiation, and it is seldom we file a formal complaint on behalf of some group or the chamber as a whole. Our efforts to secure through cooperative effort various adjustments is sometimes very discouraging, negotiations being long-drawn-out, and many times the conclusions unsatisfactory, but the formal complaints filed by Buffalo shippers are very few.

The Birmingham (Ala.) Chamber of Commerce says:

When we discover that a rate applicable to or from Birmingham is not on a relative basis as compared with other Southern cities, we first handle informally with the initial carriers at Birmingham in an effort to secure an amicable adjustment. * * * The Birmingham Traffic Association handles probably 300 of these rate adjustment controversies per year, and, on an average, it is not necessary to refer the proposition to the Interstate Commerce Commission formally in more than three or four cases per year. This indicates that we are

receiving the sympathetic cooperation of the initial carriers and are not unduly burdening the Interstate Commerce Commission with our troubles. * * * The conditions affecting the operation of our plan of handling these matters are not peculiar to Birmingham, but are common to all communities regardless of where located.

The Lowrey Agreement

The Lowrey Agreement with regard to switching charges in the Chicago District is a good illustration of what can be accomplished by skillful use of the conference method in the informal settlement of rate controversies. The origin of this agreement is described by the Interstate Commerce Commission in 27 I. C. C., 71, as follows:

Tentative Agreement

There was no single switching tariff concurred in by all the lines (in the Chicago Switching District) * * * This condition of affairs was finally brought to the attention of the Illinois Railroad and Warehouse Commission insofar as affected intra-state traffic, and that Commission promulgated on November 1, 1908, maximum switching rates for the Chicago District. * * * The carriers secured a preliminary injunction in the Federal Court against this order, pending final determination of which proceedings representatives of the carriers and of certain Chicago shippers' organizations, after numerous conferences, finally entering into a tentative agreement in writing on May 2, 1910, which provided * * * Carriers agreed to pay, and the switching lines agreed to accept from them, out of the Chicago rate (certain divisions) * * * on all commodities except coal, grain and coke.

Lowrey Tariff of 1911

These conferences between the representatives of the shippers and carriers * * * continued practically uninterruptedly until the terms of this agreement were finally incorporated into a single tariff publication known as the Lowrey Tariff, which was filed with the Commission in June, 1911, to become effective August 1, 1911. * * * The Commission arranged for a conference between its representatives and the representatives of the respective parties to the controversy. * * * Meantime the Milwaukee had filed its local tariff increasing its switching rate * * * At the conference with the Commission's representatives * * * the Milwaukee, upon further consideration, withdrew the tariff and the other carriers which had theretofore declined to become parties of the Lowrey adjustment * * * settled their differences with the local delivering roads and joined in the Tariff which was thereupon permitted by the Commission to become effective on one day's notice.

The Commission said further in 34 I. C. C., 150:

The Lowrey Agreement arose as a voluntary agreement between carriers. It was not originated by operation of law, nor was it the result of any form of adjudication, or of any order of the Commission, or of any other agency of the Government.

After filing the Lowrey Tariff in 1911, shippers and carriers in the Chicago Switching District organized the Chicago Switching Conference Committee for the purpose of

maintaining a direct point of contact between the shippers and the carriers. They empowered this Committee to deal with all subjects involving changes in switching rates; and for seventeen years the Conference Committee has been successful in adjusting every dispute, with two minor exceptions, that has arisen under the Lowrey Tariff without being obliged to call upon the Interstate Commerce Commission to adjudicate the rates published in the Tariff.

Chapter VIII—Traffic Bureaus and Shippers Councils

FOUR local chambers—St. Louis, Pittsburgh, Detroit, and Chicago—report that in addition to a well-equipped traffic bureau, each maintains a Traffic Managers Conference or Council that takes an effective part in the work of informal settlement.

St. Louis Chamber of Commerce

The St. Louis Chamber of Commerce maintains a Traffic Bureau and an Industrial Traffic Managers Conference which jointly confer with representatives of the railroads on all subjects pertaining to railroad rates, rules and regulations. As a result of cooperation between the Bureau, the Conference and the Railroads, the St. Louis Chamber has not been compelled to take to the Commission any case exclusively affecting St. Louis for more than twenty years.

The St. Louis Chamber says:

Traffic Managers Conference This department of the Chamber was established in 1906, when transportation conditions and rate fabrics throughout the country were in a rather chaotic condition. Recognizing, however, the obligations of the carriers to furnish adequate transportation facilities, and the obligation of the public to amply compensate the carriers for such service, we immediately formed what we term our "Industrial Traffic Managers Conference," now composed of some 275 traffic representatives of industries having membership in this Chamber. This Conference has met with this Bureau weekly from 1907 to the beginning of 1928, since which time it has been meeting with us monthly.

Procedure When we announced to the carriers, in 1907, the establishment of this Industrial Traffic Managers Conference, the carriers immediately appointed standing committees, representing their Traffic and Transportation Departments, to meet with like sub-committees of our Conference. All subjects pertaining to rates, rules and regulations of the carriers at any time considered

injuriously discriminatory, or otherwise unreasonably burdensome, are discussed by this Conference, and where satisfactory results are not obtained by correspondence, the subjects are considered by the joint standing committees to which reference is made, and final conclusions reached in general joint conferences.

Result Always employing these methods, but at the same time insisting upon the very best available service, for which service we are willing to pay as high, non-discriminatory rates as can reasonably be demanded, we have not yet been compelled to take a case before the Interstate Commerce Commission directly or exclusively affecting this community.

Pittsburgh Chamber of Commerce

The Traffic Division of the Pittsburgh Chamber of Commerce is directed by a General Traffic Committee, composed of 20 business executives and railroad representatives. In addition there is a shippers council, which includes in its membership 150 representatives of Pittsburgh industrial concerns. The Pittsburgh Chamber says:

Traffic Division The Chamber of Commerce of Pittsburgh maintains a Traffic Division under the supervision of the General Manager and a committee known as the General Traffic Committee, composed of 20 members of whom 15 are general or traffic executives of industries or wholesale houses, shipping or receiving freight and five represent the railroads serving the Pittsburgh District. Recommendations of the General Traffic Committee are subject to the approval of the Board of Directors before being acted upon. * * * The Traffic Division is in charge of a Manager and an Assistant Manager whose services are available to the members for advice and assistance in adjusting controversies involving rates and other transportation matters.

Shippers Council In addition a special group, known as the Shippers Council, was formed about three years ago under the by-laws of the Chamber of Commerce providing for subsidiary councils. This body now has a membership of about 150 representatives of manufacturing, mining and jobbing concerns, interested in shipping of various commodities. Membership in the Chamber of Commerce entitles them to membership in the Council without payment of extra dues or assessments. There are 15 committees, each being charged with consideration of one or more of the various phases of transportation such as demurrage, reconsigning, claim prevention, etc. The Chairman of these committees with the Chairman and Vice Chairmen of the Council form an Executive Committee.

Procedure Problems, when reported to the Traffic Division are carefully investigated by the Manager or his assistant and, if meritorious, negotiations are entered upon with the interested carriers by letter, conference or both, establishing a contact between parties on both sides and, in instances where a group of shippers are involved, a conference is arranged at which a committee is appointed to meet with representatives of the carriers. In a number of instances these conferences have included representatives of similar industries at other cities such as Chicago, Cleveland, Detroit, Buffalo, Philadelphia, Johnstown, Wheeling and Youngstown. Major problems concerning the Pittsburgh District as a whole are referred to the General

Traffic Committee for consideration and, where necessary, joint conferences are arranged with traffic executives of the carriers.

Results The Chamber of Commerce of Pittsburgh has not filed a formal complaint with the Interstate Commerce Commission or the Public Service Commission of Pennsylvania involving freight rates in the past twenty-five years, which speaks for itself. The Chamber did intervene in a number of proceedings which affected Pittsburgh's relative freight rate structure, and participated in several joint conferences of carriers and shippers at which they agreed to petition the Interstate Commerce Commission to institute rate investigations as was done in the Eastern, Southern and Western Trunk Line cases. As to minor controversies concerning individual shippers, they were aided in having them disposed of on the informal docket or adjusted through petitions to railroad classification or rate committees for necessary modification.

Concrete Illustrations Through a joint conference between the General Traffic Committee and traffic executives of the Pittsburgh railroads on the subject of interchange switching rates to Pittsburgh District, the carriers agreed to establish joint rates for inter-territorial switching movements, and also joint through rates on a flat Pittsburgh basis between the Pittsburgh terminals of each line and outside points on other lines via junctions outside of Pittsburgh, avoiding the filing of a complaint with the Commission.

An example of a minor controversy adjusted through a conference between an individual shipper and a railroad, involved a product which was not provided for specifically in the Consolidated Classification, and on which charges were being assessed on the basis of first class rates under the analogous rule. Following a thorough investigation the carrier agreed that this basis was excessive, and a petition was filed with the Classification Committee for 3rd class less carload and 5th class carload rates. The petition was granted. The carrier then filed a petition on the special docket of the Commission for authority to award reparation on about 15 carloads of the article.

Essential Features The essential features of a cooperative plan for adjustment of rate controversies are the bringing together of the traffic executives of the carriers and the shipping representatives, with their sales, production or other executives where necessary, and the preparation of complete data and analysis thereof prior to conference being held. Where the controversy involves all shippers in a particular community or a large group thereof, a small working committee should be appointed to prepare the necessary data and confer with the carriers on their established classification or freight rate committees. In many small communities, where the carriers do not maintain other than local freight agents, conferences with division freight agents at nearby points or even with the higher traffic executives at their general offices can be arranged for.

A desirable feature would be that of having a brief statement of the facts submitted to the carriers' representatives, and a frank response thereto with criticisms or suggestions for additional data necessary, prior to the holding of the conference, so that parties on both sides can discuss the problem more intelligently, and possibly reach a satisfactory conclusion without recessing.

Common Conditions The conditions obtaining at Pittsburgh exist in all communities which maintain commercial organizations having traffic and transportation departments, and to a lesser degree in those without such facilities. Small organizations which do not employ traffic men, do have transportation committees,

the members of which are the traffic representatives of individual shippers, and a possible plan for them might be worked out after completing a study of the plans in operation in the larger cities.

Detroit Board of Commerce

The Traffic-Transportation Department of the Detroit Board of Commerce is directed by a Committee composed of 23 individual traffic managers. In addition the Board maintains a District Shippers Conference with numerous sub-committees, also composed of industrial traffic men. There are no railroad men on any of these committees. The Board of Commerce says:

Traffic Transportation Department] The Traffic-Transportation Department of the Detroit Board of Commerce is maintained primarily for the purpose of having a competent bureau to analyze and adjust for the protection of Detroit interests, the charges for local and terminal transportation service, the freight rate adjustments to and from Detroit as compared with those of competing centers; the improving, where possible and necessary, of merchandise distribution service; the lending of intelligent and efficient aid in avoiding traffic congestion; the furnishing of authoritative information and advice to members on all matters pertaining to transportation of commerce and the rulings and decisions of classification and rate committees, regulatory bodies and tribunals. This service is necessarily of a general nature and is intended to be of benefit to Detroit as a whole.

Organized Cooperation At the time of the reorganization of the Traffic-Transportation Department the governing committee recognized the important fact that the railroads themselves are highly organized in every branch of their service to deal with the many different intricate traffic and transportation problems affecting that business and so, I believe, had in mind in establishing the Traffic-Transportation Department that a similar organization might be set up for the benefit of the shippers so that any dealings, cooperative or otherwise, might be handled in an organized way. The instrument of cooperation is the District Shippers Conference.

District Shippers Conference The District Shippers Conference has set up certain committees dealing with the different traffic and transportation problems for the purpose of conferring and cooperating with related committees of the railroads. In every instance where the problem was of a character susceptible to cooperation, the results have been highly satisfactory.

In other words, insofar as the Detroit Board of Commerce is concerned, its Traffic-Transportation Department is definitely recognized as the shippers institution, founded on a cooperative program but, nevertheless, equipped to deal with community problems affecting the shipper's interest in an organized way much the same as the railroads.

Chicago Association of Commerce

The Traffic Bureau of the Chicago Association of Commerce is under the direction of a Transportation Committee composed of ten members—seven business men and three

railroad executives. This Committee is aided by an Industrial Traffic Division composed of traffic managers representing every important industry in the Chicago District. In a recent special report, the work of the Chicago Association in this field is described as follows:

Organization The Chicago Association of Commerce like many other local chambers, believes that whenever possible rate controversies should be settled by conference and cooperation between shippers and carriers instead of by formal litigation before the Interstate Commerce Commission. Accordingly during the past twenty-five years the Association has maintained a standing Committee on Transportation that has as one of its chief aims the informal settlement of railroad rate controversies; and during the past year has established a new Division—the Industrial Traffic Division—that will be of material assistance to the Transportation Committee in making this work effective.

Transportation Committee The Transportation Committee is composed of seven leading business men and three railroad executives. The membership remains the same year after year, and the policy of the Committee has been continuous and consistent for more than a quarter of a century. Whenever for any reason it becomes necessary to add a new member he is nominated by the Committee and confirmed by the officers of the Association. When any rate controversy arises in the Chicago District, or in the Great Central Market of which Chicago is the industrial capital, the Transportation Committee seeks to negotiate informally a settlement that will be satisfactory to both sides, and thus to prevent formal litigation before the Interstate Commerce Commission.

In each instance the procedure of the Committee is determined by the character of the particular matter in hand. It may be possible to settle the disputed point at a round-table discussion within the membership of the Committee; or it may be necessary to call into conference other shippers and other railroad men in the Chicago District. In a few instances the Committee has organized a general conference representing the leading shippers throughout the surrounding territory, for example the conference that for more than two years immediately preceding the Western Trunk Line Class Rate Investigation tried to settle informally some of the numerous rate controversies now involved in that case, or at least to narrow the issues. The work of this conference showed beyond question that it is possible to get the shippers throughout a considerable territory to work together in a common effort to adjust rate difficulties.

The Committee always tries to narrow the issues that enter into any rate controversy that comes to its attention, and if possible to settle it in conference. As a result of this work, during the past twenty years the Chicago Association, on its own motion, has filed with the Commission only one formal complaint; although, of course, it has intervened in many cases that affected the interests of Chicago shippers and carriers. Whenever necessary the Association sets up, in addition, special committees to confer with the railroads with regard to proposed changes in railroad rates.

Industrial Traffic Division The Association also maintains an Industrial Traffic Division that acts as a clearing house for the Transportation Department, a means of reaching all of the shippers in the District, obtaining their views on current rate questions, and keeping them in touch with rate policies adopted by the Transportation Committee and the entire Association.

The Industrial Traffic Division is composed of representatives of all manufacturers, wholesalers, shippers, and receivers located within the Chicago Metropolitan District, i. e., the territory on and within the boundaries of the Elgin, Joliet and Eastern Railway from Waukegan to Gary, inclusive. There are in that district 11,000 shippers and receivers of freight, including approximately 5,000 owners of private side-tracks, located within the Chicago Switching District alone.

All shippers and receivers of freight in the District are eligible to membership in the Division, whether or not they are members of the Chicago Association of Commerce. The Association gives them the same recognition that it gives to other professional groups such as accountants, attorneys and physicians. Automatically they all become members of this Division, and they are not required to pay any special dues.

There are in this Division thirty-six commodity groups. Each member is assigned to one or another of these groups. There are also thirteen standing committees dealing with demurrage, switching, express, terminal service, air transportation and other subjects. The Chairman of each commodity group and of each standing committee serves as a member of the Executive Committee of the Division.

Similar Conditions in Other Cities

The conditions that make it possible for the local chambers in St. Louis, Pittsburgh, Detroit, and Chicago to succeed in this work are not peculiar to these cities or to these organizations. They exist to a greater or less degree in every business community that maintains a chamber of commerce. These chambers include in their membership business and professional men who represent every important interest in the community. So does every chamber of commerce. They aim to serve as spokesmen for all shippers and receivers of freight in the community. So does every chamber of commerce.

When any controversy over rate matters threatens to interfere with the prosperity of both shippers and carriers in one of these cities or in the larger territory that is tributary to it, the local chamber brings together around the table representatives of both sides and seeks to adjust the difficulty without formal litigation. Every other chamber of commerce is in a position to perform a similar service for the entire body of shippers and receivers of freight in its immediate territory.

They may not be able to call into conference the presidents of great railroad systems; but they can confer with the highest railroad officials who are located in their immediate territory.

They may not be able to place on their Transportation Committee business men who supply a national or an inter-

national market; but they can appoint the business leaders of their own community, the men who originate a substantial volume of traffic on which the railroads depend.

They may not be able to spend a large amount of money in maintaining a fully equipped Traffic Department; but they can employ a competent Traffic Manager to advise the members of the Chamber how to settle rate difficulties without unnecessary litigation.

They may not be able to organize an Industrial Traffic Division that represents every important branch of American business and industry; but they can establish direct contact with every shipper and receiver of freight in the city or district from which they draw their members, and they can provide these shippers with competent leadership in a concerted effort to settle by informal methods many rate controversies that would otherwise result in formal complaints to the Interstate Commerce Commission.

Chapter IX—Proposals for Cooperation

MANY people believe that in the public interest the three groups directly concerned in freight rate adjustment—shippers, railroads, and regulatory commissions—should adopt some well-considered plan for closer cooperation in using the various methods of informal settlement that are described in this bulletin. They have proposed various plans for such cooperation:

the Meyer Plan for establishing Advisory Councils in Railway Administration;

plans for expanding the work of the Bureau of Traffic of the Interstate Commerce Commission as an agency for the informal settlement of railroad rate controversies;

plans for conducting an educational campaign that will give to the business men of the country accurate information with regard to the importance of industrial traffic management as a factor in business prosperity;

plans for improving the procedure now followed by Railroad Freight Associations in docketing proposed rate changes and conducting public hearings on proposed rates that are questioned by either shippers or carriers; and

plans for cooperative rate-making based on successful experience gained by the Regional Shippers Advisory Boards in dealing with service matters.

Advisory Councils in Railway Administration

The idea of establishing Advisory Councils that will afford an opportunity to settle controversies by informal conference and cooperation between the Government, the shippers, and the railroads is not new. It was suggested in 1902 by Hon. Balthasar H. Meyer, then Professor of Economics in the University of Wisconsin, and now senior member of the Interstate Commerce Commission. In an article on "Advisory Councils in Railway Administration," published in the Annals of the American Academy of Social and Political Science, Mr. Meyer said:

> There exists no regularly constituted middle ground on which the two parties can meet and deliberate, on the basis of authentic facts, and arrive at conclusions just and satisfactory to both, and in accordance with the needs of the whole population, viewed in the broadest possible light. * * *

Mr. Meyer suggested the establishment by law of a system of state and interstate councils having advisory powers only, and representing all of the various interests of the entire population as far as practicable. He then continued:

> These councils are to be clearing houses of information through which the railways and the public will learn to know each others interests better, and through which the material interests of both these great parties will be built up in accordance with principles of justice and equity. * * *
>
> The council system, as proposed, fits in with the present order of things. There is nothing radical nor disorganizing about it. It simply aims to bring together into one harmonious system the various isolated independent efforts which have long been made by many railways in the United States and by private organizations. It aims to do systematically and well what is now attempted without system in a manner more or less one-sided.

Bureau of Traffic

In 1927 the National Industrial League proposed that the Bureau of Traffic of the Interstate Commerce Commission be given an opportunity to extend its work as an agency for the informal settlement of railroad rate controversies.

The report adopted by the League recommended that the Commission develop its Bureau of Traffic into an "agency adequately equipped to participate in conferences between shippers and carriers where they are making an effort to compose their differences without resort to formal procedure"; and pointed out that "this will mean an enlargement of the Division of Traffic and provision for experienced men who may participate in such conferences between the representatives of shippers and carriers."

Educational Campaign

Several national organizations, including the Chamber of Commerce of the United States, the United States Department of Commerce, and the Associated Traffic Clubs of America, have made an active effort to assemble and distribute the information needed by business men who desire to establish industrial traffic departments either in their own business concerns or in the chamber of commerce or the trade association with which they are affiliated. In every instance the informal settlement of railroad rate controversies is sure to be an important function of such a department.

Procedure of Railroad Freight Associations

The railroad freight associations are, of course, strongly in favor of any plan that will help them to make readjustments in the freight rate structure without unnecessary litigation. They believe that the best way to accomplish this purpose is to perfect the procedure used by the Standing Rate Committees that have been appointed by each of the freight associations. Therefore, they have appointed three conference committees—one in the East, one in the South, and one in the West—to cooperate with three corresponding committees appointed by the National Industrial Traffic League in the work of perfecting this procedure.

During the past year these committees have recommended and the freight associations have adopted and put into practice certain important changes in the established procedure for rate committees that are regarded as a distinct step in advance. These changes are embodied in the agreement printed in Appendix A of this bulletin.

Cooperative Rate Making

The idea has frequently been put forward that shippers should deal with rate controversies by methods similar to those which the Regional Shippers Advisory Boards have used so successfully in dealing with car supply and car service—that is that shippers should establish a series of Advisory Rate Boards to cooperate with the Interstate Commerce Commission and the railroads in an organized effort to settle rate controversies, whenever possible, by conference and cooperation instead of by litigation.

Supporters of this proposal have said that in their opinion such boards, if properly administered, would eliminate 50 per cent of the litigation that must now come before the Commission; and that the proposed boards would thus accomplish a twofold purpose: first, they would help shippers and carriers to settle half their rate difficulties by prompt and inexpensive methods; and, second, by reducing the number of formal cases they would speed up the consideration and settlement of the other 50 per cent that must in any event be brought before the Commission.

In April, 1925, Hon. Clyde B. Aitchison, then Chairman of the Interstate Commerce Commission, speaking before the Atlantic States Shippers Advisory Board—which deals with questions affecting car supply and car service, but not with railroad rates—said:

> I have shown that the ends sought in the creation of these Shippers' Advisory Boards commend themselves as calculated to promote the commerce and prosperity of the country. The means adopted for promoting the understanding of these transportation problems and adjusting transportation difficulties informally are natural and normal. Basically the idea is simple. It is exactly what we would expect business men would do.

A few months later, Hon. Ernest I. Lewis, then a member and later chairman of the Interstate Commerce Commission, said in an address before the National Association of Railroad and Utilities Commissioners:

> One of the most important opportunities for promoting good relations between the carriers and the public lies in improving the arrangements for considering and disposing of proposals for changes in the rate structure. * * * The outstanding success of cooperation with shippers in the field of service should have disarmed the suspicion of railroad rate men and made them more friendly to the same method with respect to the rate problem.

In the same year, Mr. Robert C. Ross, General Chairman of the Mid-West Regional Advisory Board, said in a public address:

> The uncertainty today of general rate structures in many territories is a tremendous handicap to business, and there are many projects which do not go forward on account of this serious condition. * * * I believe the solution of the problem is largely in the hands of the shippers and the carriers themselves. The remarkable results attendant upon the Advisory Board method of solving service problems point the way to a similar method of improving our rate making machinery. * * *
>
> Plenty of evidence that such a mode of settling disputes is not visionary may be found. The iron and steel shippers in the Illinois rate territory have agreed among themselves and with the carriers upon changed groupings and rates to be adopted within the territory as a result of the Jones-McLaughlin case. The traffic directors of the western grain markets have also formed an organization for the purpose of settling their difficulties among themselves before producing the carrier before the Commission. These two instances presage greater activity in this direction.

At about the same time Mr. C. E. Childe, Traffic Manager of the Omaha Chamber of Commerce, and later President of the National Industrial Traffic League, proposed a definite plan for creating throughout the country a series of Shippers Rate Conference Boards that would be similar in their form of organization to the Regional Shippers Advisory Boards that have been established to deal with service matters. These Boards would each serve a definite rate territory, would be composed entirely of shippers, and would be divided into commodity committees. Their efforts would be coordinated by a central agency that would be a division of the American Railway Association, and would be supplemented by a series of Railroad Contact Committees—one for each Rate Conference Board.

Mr. Childe said in his article:

> Shippers who believe in the settlement of rate questions by cooperation rather than by contest, elimination of all unjust discriminations, and maintenance of adequate revenue for the carriers, and who will pledge themselves with the carriers through a sincere effort to work out their problems of freight rate adjustment in accordance with these principles, are invited to become members of the National Shippers' Rate Conference Boards.

The plan proposed by Mr. Childe was given a partial trial in the conference conducted under the leadership of the Chicago Association of Commerce during the two years immediately preceding the Western Trunk Line Class Rate

Investigation. In a report on "Cooperative Rate Making," published in January, 1927, the Chicago Association made the following reference to the work of this conference:

> Chicago assumes an active and leading part in advocating the adjustment of rate problems by cooperation between the carriers and shippers; thus avoiding expensive and prolonged litigation. It is gratifying to report that many otherwise possible controversies have been settled by mutual agreement, thereby best serving the interests of all concerned.
>
> Realizing the necessity for a general revision and harmonization of the class rates in Western Trunk Line territory, we have through cooperation with our neighbors throughout this vast area, and the carriers serving it, undertaken to solve the problem informally. Negotiations have been in progress for approximately two years and an agreement has been reached on many disputed points. That work is continuing and we hope eventually to reach an agreement which will result in a minimum advance in rates, bringing about that degree of harmonization which is so necessary to eliminate existing discriminations, and materially relieve the burden of the Interstate Commerce Commission.

In a recent report on "The Constitution, Duties and Powers of the Interstate Commerce Commission," Dr. C. S. Duncan, Economist of the Association of Railway Executives, said:

> Is it possible that the cooperation between the railroads and the shippers with respect to car service must halt at the boundaries of this field and not be carried into the related field, with all its difficult, complex and delicate phases, of rates? Is it not possible, permitting the regulatory provisions to remain as they are, for traffic executives to come in closer contact with the shipper on some such cooperative principles as underlie the Regional Advisory Boards, reach a common agreement on countless issues, settle these in conference and to that extent relieve the Interstate Commerce Commission? * * * If the railway executives now believe that they are ready to consider seriously some program looking to the accomplishment of cooperative and mutually satisfactory results, there is considerable evidence that the shippers are minded to meet them half way.

Mr. A. G. T. Moore, Traffic Manager of the Southern Pine Association, and General Chairman of the Southeast Shippers' Advisory Board, has made similar suggestions looking toward cooperation between shippers and carriers in adjusting rates. In 1927 he made an address on "How Would George Washington Handle Our Traffic and Transportation Problems?" After expressing his belief that the traffic relations between shippers and carriers can be brought to a more harmonious state through voluntary methods, he said:

> Sufficient seeds falling on fertile soil will take root and blossom out perchance into an authorized conference between shippers' and carriers' representatives for the purpose of initiating at least an in-

vestigation into the subject. * * * I shall herald an initial conference of the proper character, under the proper auspices and with the proper personnel as the dawn of a new, friendly, constructive and profitable era in our relations.

National Organizations Interested

Eight national organizations are now working—each in its own way—to increase the use of one or another of the methods of informal settlement that are described in this bulletin. The list includes:

Interstate Commerce Commission
National Association of Railroad and Utilities Commissioners
United States Department of Commerce
Association of Railway Executives
Railroad Freight Associations
Associated Traffic Clubs of America.
National Industrial Traffic League
Chamber of Commerce of the United States

The Interstate Commerce Commission, as already shown, maintains two bureaus that seek to settle rate controversies informally whenever possible—the Bureau of Informal Cases, which works entirely through correspondence; and the Bureau of Traffic, which usually seeks to bring the parties together around the conference table and help them to settle their differences without filing a formal complaint with the Commission.

The National Association of Railroad and Utilities Commissioners is interested in the informal settlement of rate controversies for the same reason that the Interstate Commerce Commission is interested—that is because its members, who are all members of State or Federal regulatory boards, are responsible under the law for the settlement of rate controversies, and they know that if a controversy can be settled informally it will to that extent relieve their formal docket.

The United States Department of Commerce has made a survey of the traffic work of commercial and industrial concerns throughout the country "in an effort to determine the place of industrial traffic management as a factor in the elimination of waste in the distribution of merchandise,"

and will soon publish a bulletin on "Industrial Traffic Management" which reports many instances in which industrial traffic departments have helped to settle potential rate controversies by informal methods.

The Association of Railway Executives, as an association, has no direct responsibility for dealing with freight rate schedules; but its members, the chief executive officers of every important railroad in the United States, are in each instance responsible for the traffic departments as well as for every other department of the individual railroads

The Railroad Freight Associations in every section of the country have organized Standing Rate Committees that spend their entire time in an effort to adjust freight rate schedules without unnecessary litigation.

The Associated Traffic Clubs of America is a federation of the local traffic clubs in 59 cities of the United States—clubs that include in their membership both industrial traffic managers and railroad traffic officials. This organization has launched an educational campaign that seeks to inform students of traffic, industrial traffic managers, and business men throughout the country with regard to various important traffic questions including the value of traffic departments as an agency for the informal settlement of railroad rate controversies.

The National Industrial Traffic League, in conference with the traffic officials of the railroads, has secured the adoption of a definite procedure to be followed by the Standing Rate Committees of the Railroad Freight Associations in docketing proposed rate changes and in conducting public hearings on any proposed changes that are protested by either the shippers or the carriers.

The Chamber of Commerce of the United States seeks to help its 1,800 organization members and their underlying membership of 1,000,000 business men, to deal effectively with transportation problems that are clearly of national importance. There is at the present time no transportation question of greater national importance than this: "How can the Interstate Commerce Commission use its powers and perform its duties most effectively in the public interest?" The immediate importance of this question lies in the fact that the enormous volume of work required of

the Commission by Congress threatens to overwhelm the Commission. One answer to this question is "Reduce the amount of litigation before the Commission by settling rate controversies informally whenever possible." Therefore, the National Chamber is publishing this bulletin—first, to give its members a clear picture of the methods now being used by shippers, by railroads, and by the Commission itself to prevent unnecessary rate litigation; and, second, to urge its members to use these methods whenever possible in preference to formal litigation.

Conclusions

THE Railroad Committee has considered the material presented in this bulletin and has reached the following conclusions:

1. There has been a general expression of opinion in favor of increased use of the established methods of informal settlement of railroad rate controversies.

2. It is the judgment of the Railroad Committee that activities along this line should be encouraged and extended as being in the public interest, and as being a practical means of relieving the overburdened Interstate Commerce Commission.

3. In carrying out the purpose to encourage and extend the use of established methods of informal settlement of rate controversies, it would be desirable to

(a) secure the active cooperation of railroad and business executives in the movement to settle rate controversies informally whenever possible;

(b) enlarge the staff and broaden the work of the Bureau of Traffic of the Interstate Commerce Commission as an agency for the informal settlement of rate controversies;

(c) propose to the Department of Commerce that its study of the relation of traffic management to business prosperity be pushed to completion on a comprehensive scale;

(d) place at the service of the business men of the country the results of this study of the organization and methods of chambers of commerce and trade associations that have been successful in the informal settlement of railroad rate controversies, and continue the study with a view to securing information on which to base more definite recommendations;

(e) study the organization and methods of the Standing Rate Committees and place a record of their experience at the service of the business men of the country; and

(f) coordinate the efforts of the various agencies interested in settling railroad rate controversies wherever possible through informal conference and cooperation instead of through formal litigation.

APPENDIX A

AGREEMENT BETWEEN THE NATIONAL INDUSTRIAL TRAFFIC LEAGUE, REPRESENTING SHIPPERS, AND THE TRAFFIC EXECUTIVES, REPRESENTING RAILROADS IN THE EASTERN, SOUTHERN AND WESTERN DISTRICTS, COVERING THE DOCKETING OF TARIFF CHANGES AND THE PROCEDURE BEFORE RATE COMMITTEES.

REVISED AS OF OCTOBER 1, 1929.

Section A. *Docketing Tariff Changes.*

Proposals for all changes in rates, rules or regulations will be placed on the Public Docket, except as provided in Section D.

Sec. B. *Committee Procedure.*

(1) Changes requested by shippers will be promptly docketed with the proper rate committee by the carrier and effort will be made by the railroad rate committees to expedite action thereon and the committees will, upon request of the shipper interested, advise him of progress with respect to the subject.

If carrier receives from shipper an objectionable proposal the carrier may properly endeavor to have shipper amend or withdraw such proposal, failing in which the proposal should then be docketed without obligation on the part of the carrier to support it.

(2) As to changes in rates, rules or regulations as proposed by carriers, the railroad representatives serving on the railroad rate committees will, upon *specific* request of shippers, state the ground upon which changes are justified.

(3) When requested by shippers' representatives, either in person or by written communication, the chairmen of the railroad committees will promptly advise those making specific request what action is finally decided upon with respect to any docketed subject that has been considered by the committee.

(4) When shippers' representatives have been advised, as provided in Section B (3), and such representatives promptly advise the Chairman of the Railroad Committee that a conference is desired with one or more of the traffic executives directly involved, the publication of the change will be delayed until an opportunity is given the shippers' representatives to confer with such executives.

(5) If conference as provided in Section B (4) does not result in the acceptance of the shippers' views in disposing of the subject and the carriers decide to publish the change proposed, the shippers' representative will be promptly advised and will then be at liberty to ask for suspension if he so desires.

(6) The carriers upon specific request will undertake to furnish shippers with reasons for refusal to accede to proposals for rate changes proposed by them (the shippers).

Sec. C. *Tariff changes not to be published without further docketing.*

(1) Where subject has been on the docket for an extended period without announcement or conclusion and without active steps toward its disposition, until the public shall be given further opportunity to be heard.

NOTE: Where disposition notices are issued, subject remaining on the docket unacted upon for twelve months or longer shall not be published without redocketing. Where disposition notices are not regularly issued, subjects remaining on the docket for a period longer than six months shall not be acted upon without redocketing.

(2) Where subject has once been docketed and has been withdrawn from the docket.

Sec. D. *Exceptions to Section A.*

Proposals for all changes in rates will be placed on the public docket *except* those in the following classes:

(1) Compliance with Rule 77 of I. C. C. Tariff Rules (or similar rules) in establishing rates which are not less than rates to or from a point beyond.

(2) Compliance with the fourth section of the Interstate Commerce Act.

(a) In establishing rates to or from intermediate points and on combination of intermediate rates.

(b) In establishing rates under the long and short haul rule where relief is denied or withdrawn.

(3) To place one route on the same basis as another unless there is important intermediate territory involved, in which event the changes will be docketed.

(4) Establishment of rates on commodities upon which it is customary to publish commodity rates and upon which class rates or combination of intermediate rates only are in effect, to place them in relation with rates in the same general territory on the same commodity, provided this does not result in an advance.

(5) Establishment of transit arrangements where none now exist to place such points on the same basis as generally applied throughout the same territory.

(6) Local rates the same as from contiguous points of origin or to contiguous points of destination.

(7) Establishment of rates made by differential routes on the usual differential basis under the rates via standard routes.

(8) Establishment of rates on commodities upon which it is usual to apply the same rate as on another commodity when made the same as the rate on such other commodity, provided it does not result in an advance.

(9) The tariff changes listed below:

(a) Addition of stations and landings on old lines.

(b) Station changes which note the addition of facilities.

(c) Station changes which note the establishment of new or additional facilities for handling less-than-carload freight at a specified station.

(d) Station changes which note the establishment of new or additional *facilities* for handling live stock at a specified station.

(e) Opening and closing of stations or landings at which business is transacted only during certain seasons of the year.

(f) Changes removing restrictions at a specified station as to the handling of inbound and outbound freight.

(g) Changes removing or modifying restrictions at a specified station as to the delivery of freight on private sidings.

(h) Station changes which note the establishment of new interchange tracks at a specified station.

(i) Removal or modification of restrictions designating stations as junction points, passing tracks or towers at which no freight will be handled.

(j) Rates on circuses and other show outfits.

(k) Suspension and restoration supplements.

(l) Changes in or arrangements for allowances for transferring LCL shipments of freight between depots or transfer points.

(m) Changes in rates or charges for the purpose of correcting typographical or clerical errors, if discovered within ninety days after tariffs become effective.

THE foregoing agreement is intended to cover all rate changes except those growing out of decisions of the Interstate Commerce Commission. It should be clearly understood that the agreement which the League reached with the traffic executives was primarily to cover rate and classification changes. The carriers cannot in every case agree to docket all changes growing out of decisions by the Commission, where the change is not subsequently embraced in the complaint, but required in the revision because of the relationship of rates.

The understanding in the different classification territories with respect to such changes is as follows:

Official Classification Territory Our lines accept the principle that the carriers, in making readjustments which are designed to comply with decisions of the Interstate Commerce Commission, should arrange for public docketing if said readjustments intentionally broaden the scope of such decisions, *but* they cannot bind themselves to docket changes which extend beyond the scope of the Commission's findings. This is because the Commission cannot broaden the scope of its findings beyond the evidence in a case and the pleadings are frequently so narrow that reasonable compliance with the order necessitates a broadening of the *scope* of the findings to avoid various infractions of the Commerce Act. Such broadening of the scope of Commission findings is perhaps quite as likely to involve reductions as increases. Moreover, the carriers frequently are confronted with the necessity of proceedings under short notice permission in complying with orders of the Commission, and they must immediately adjust themselves to the law, using their best judgment as to how this shall be done.

It is our view that this question should rest with recognition of the principle, as above, and if the shippers feel in any case that the carriers have made a readjustment which unreasonably extends the scope of the Commission's findings, protest be made appropriate to the conditions if the readjustment has not been docketed.

Western Territory It is the view of the Western Lines that this request should be complied with when date of the Commission's orders will permit of so handling, but in many cases such orders make necessary rate checks to determine the scope of the rate changes and revisions required to meet Fourth Section conditions which must be made in complying with the orders, and often considerable time is consumed in compiling such data, leaving so little time for compliance before effective date of the orders that docketing and holding public hearings would be impossible.

Southern Territory There appears to be no objection to docketing changes described where it is practicable, but in some instances the orders of the Commission requiring a change between a few points or a limited area makes necessary other changes to avoid violation of Section Three or Four, and the limited time allowed by the Commission will not permit public docketing.

REDUCTION

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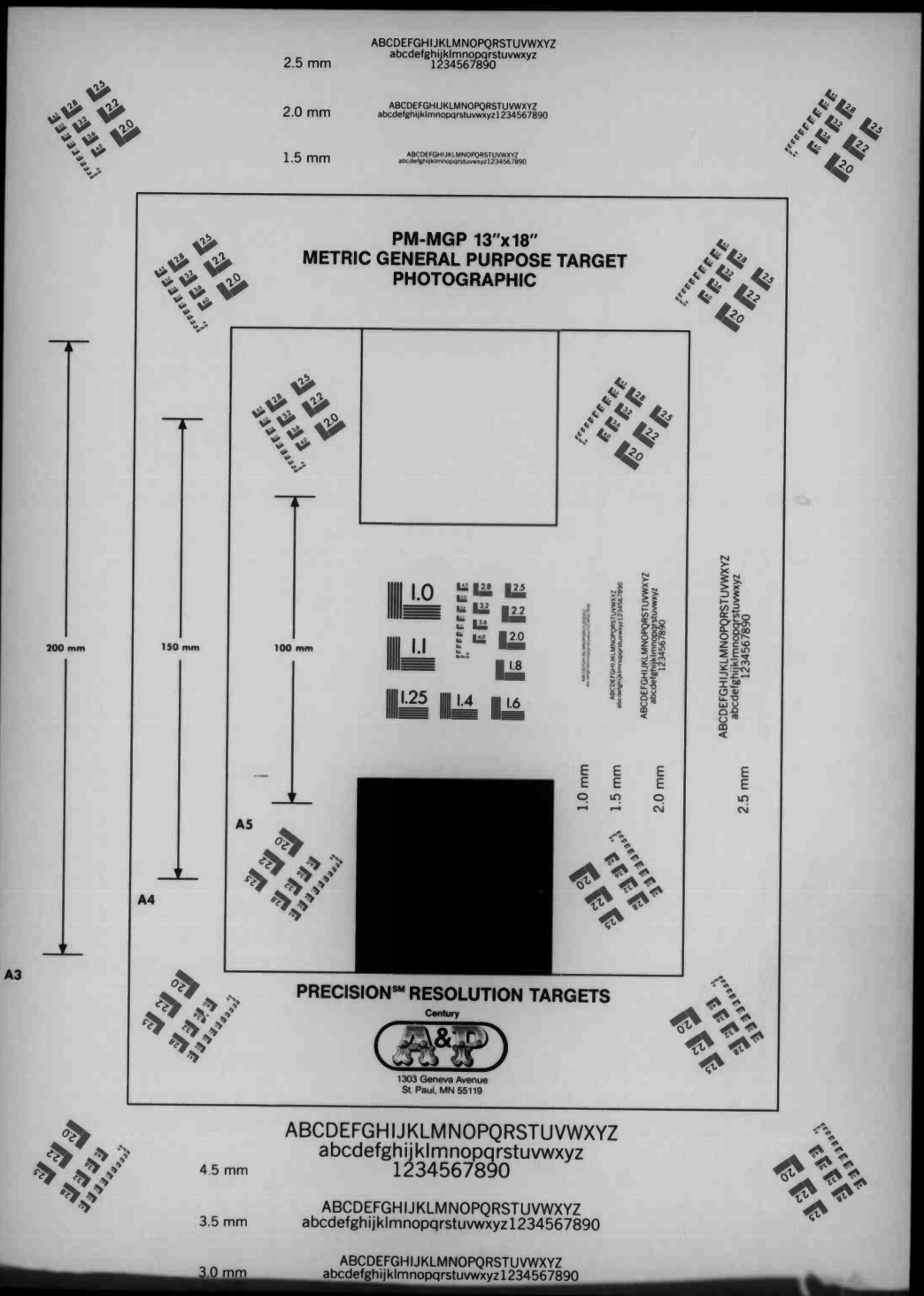
2.5 mm
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abcdefghijklmnopqrstuvwxyz
1234567890
2.0 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890
1.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890
PM-MGP 13"x18"
METRIC GENERAL PURPOSE TARGET
PHOTOGRAPHIC
200 mm
150 mm
100 mm
A3
A4
A5
1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
1.0 mm
1.5 mm
2.0 mm
2.5 mm
PRECISION℠ RESOLUTION TARGETS
Century
A&D
1303 Geneva Avenue
St. Paul, MN 55119
4.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
3.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890
3.0 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
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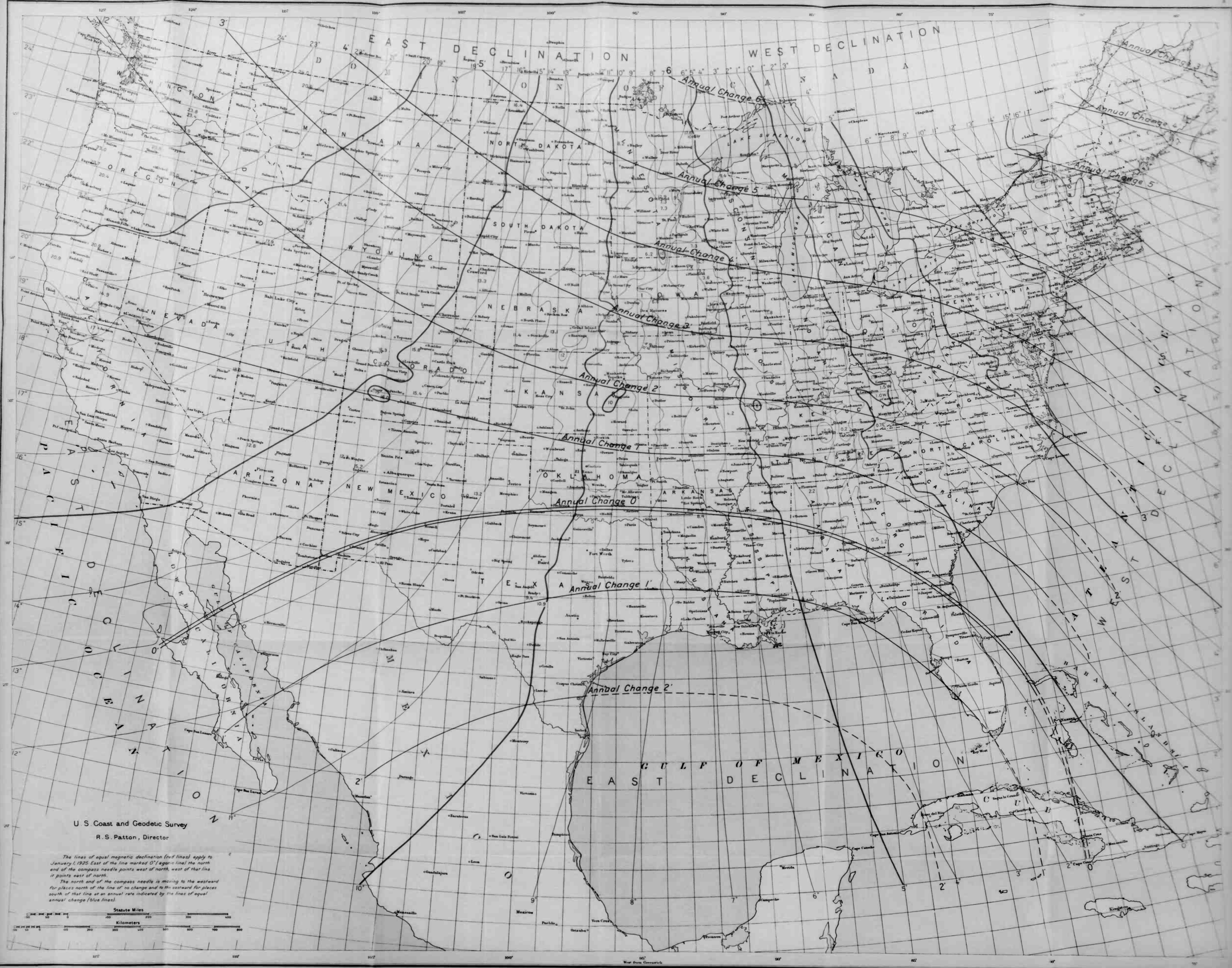
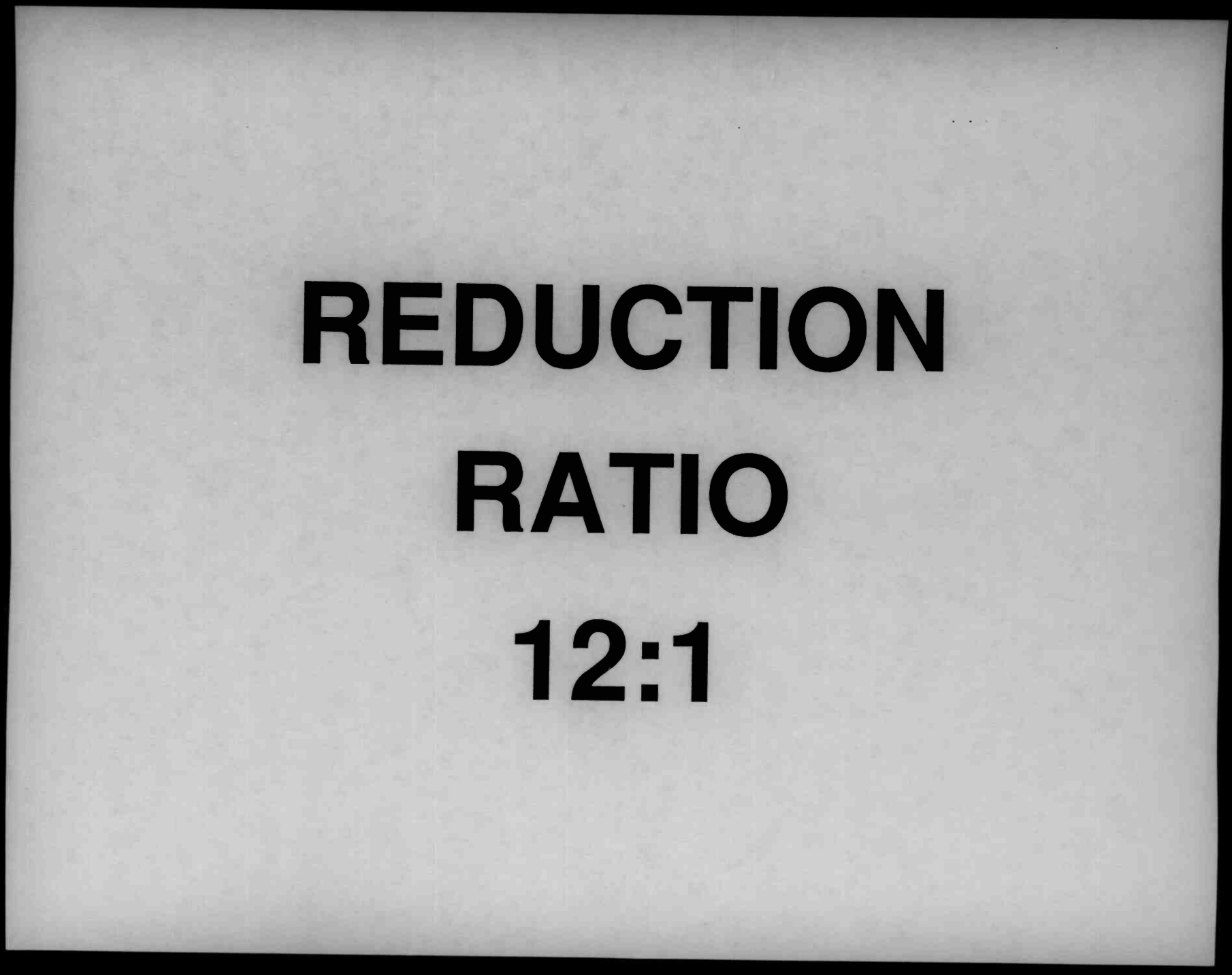
LINES OF EQUAL MAGNETIC DECLINATION AND OF EQUAL ANNUAL CHANGE IN THE UNITED STATES FOR 1925

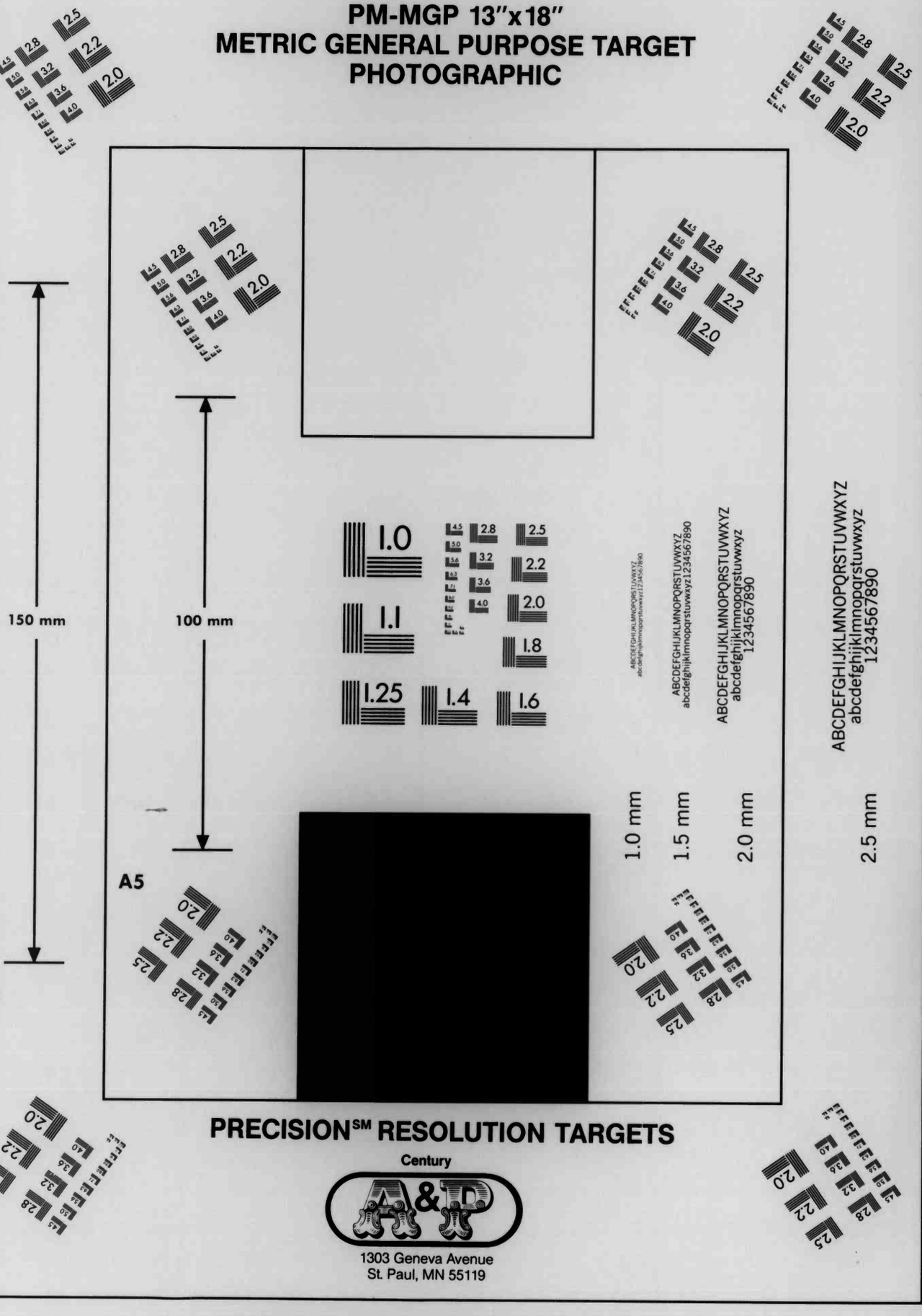



REDUCTION
RATIO
12:1

2.0 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz1234567890

1.5 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz1234567890

PM-MGP 13"x18"
METRIC GENERAL PURPOSE TARGET
PHOTOGRAPHIC



PRECISION℠ RESOLUTION TARGETS

Century A&P

1303 Geneva Avenue
St. Paul, MN 55119

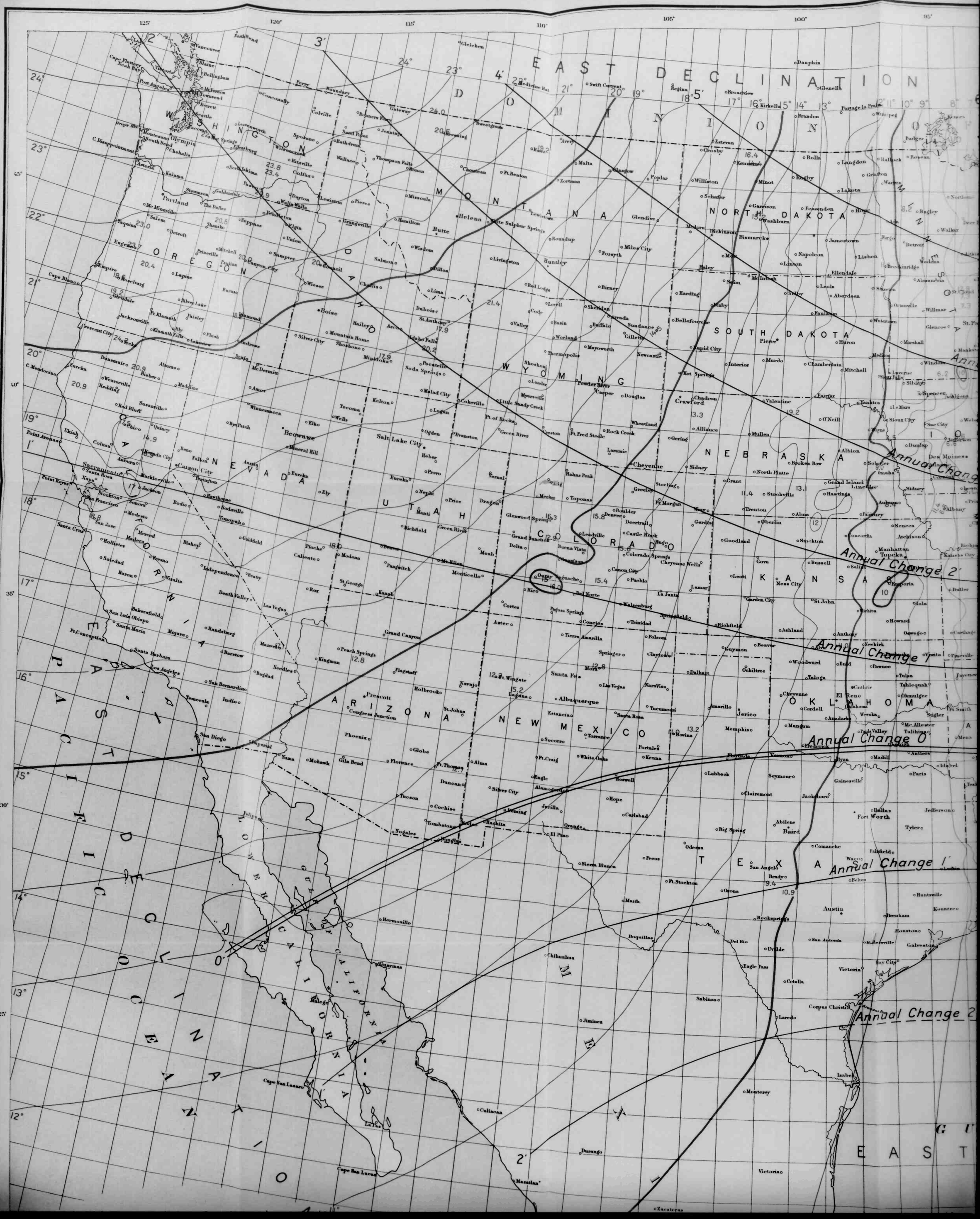
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

4.5 mm

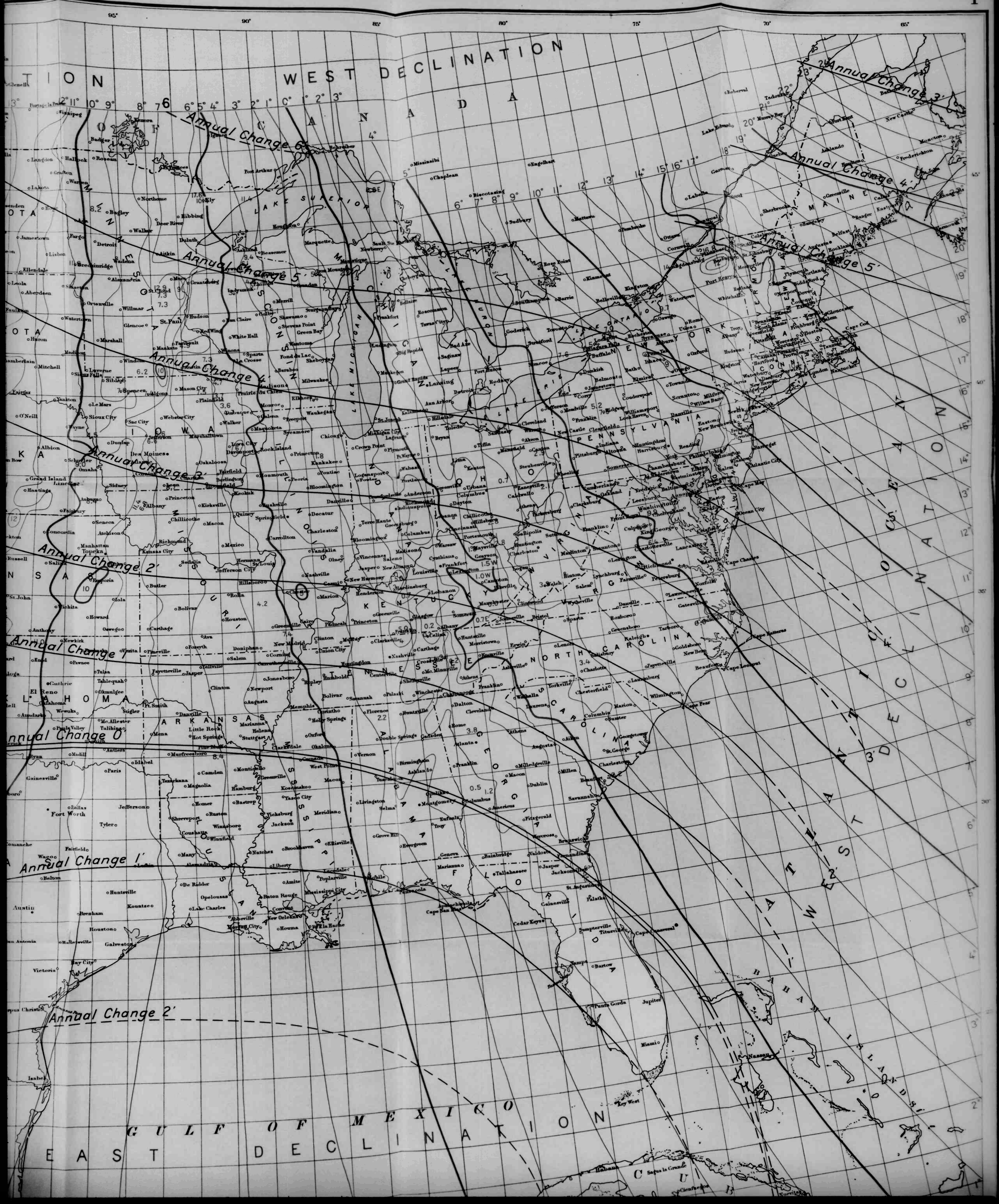
ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz1234567890

3.5 mm

LINES OF EQUAL MAGNETIC DECLINATION AND OF EQUAL ANN



OF EQUAL ANNUAL CHANGE IN THE UNITED STATES FOR 1925



U.S. Coast and Geodetic Survey

R.S. Patton, Director

The lines of equal magnetic declination (red lines) apply to January 1, 1925. East of the line marked 0° (agonic line) the north end of the compass needle points west of north, west of that line it points east of north.

The north end of the compass needle is moving to the westward for places north of the line of no change and to the eastward for places south of that line at an annual rate indicated by the lines of equal annual change (blue lines).

Statute Miles 100 50 0 100 200 300 400

Kilometers 100 50 0 100 200 300 400 500 600 700 800

Annual Change 2′

Annual Change 1′

Annual Change 0′

Annual Change 1′

Annual Change 2′

MONTANA

NORTH DAKOTA

SOUTH DAKOTA

OREGON

WYOMING

NEBRASKA

NEVADA

UTAH

COLORADO

KANSAS

ARIZONA

NEW MEXICO

OKLAHOMA

TEXAS

PACIFIC OCEAN

GULF OF CALIFORNIA

MEXICO

EAST

Portland · Seattle · Spokane · Helena · Butte · Billings · Bismarck · Fargo · Minneapolis · Omaha · Denver · Salt Lake City · Boise · Reno · Carson City · Sacramento · San Francisco · Los Angeles · San Diego · Phoenix · Tucson · Albuquerque · Santa Fe · El Paso · Oklahoma City · Dallas · Fort Worth · Houston · San Antonio · Kansas City · St. Louis · Chicago · Detroit · Cleveland · Pittsburgh · Buffalo · New York · Boston · Philadelphia · Washington · Atlanta · Charleston · Jacksonville · Miami · New Orleans · Memphis · Nashville · Louisville · Cincinnati · Indianapolis · Milwaukee · Duluth · Winnipeg · Mexico · Monterrey · Guadalajara · Mazatlan · Durango · Chihuahua · Hermosillo · Guaymas · La Paz · Cape San Lucas · Manzanillo · Acapulco · Veracruz · Tampico · Merida · Havana · Nassau · Bermuda

Annual Change 5' East

Annual Change 4' East

Annual Change 3' East

Annual Change 2' East

Annual Change 1' East

Annual Change 0'

Annual Change 1' West

Annual Change 2' West

Annual Change 3' West

Annual Change 4' West

Annual Change 5' West

EAST DECLINATION

WEST DECLINATION

GULF OF MEXICO

LAKE SUPERIOR

LAKE MICHIGAN

LAKE HURON

LAKE ERIE

LAKE ONTARIO

MINNESOTA

IOWA

NEBRASKA

KANSAS

OKLAHOMA

MISSOURI

ARKANSAS

LOUISIANA

TEXAS

WISCONSIN

ILLINOIS

INDIANA

OHIO

KENTUCKY

TENNESSEE

MISSISSIPPI

ALABAMA

GEORGIA

FLORIDA

SOUTH CAROLINA

NORTH CAROLINA

VIRGINIA

WEST VIRGINIA

PENNSYLVANIA

NEW YORK

MAINE

VERMONT

NEW HAMPSHIRE

MASSACHUSETTS

CONNECTICUT

BAHAMA ISLANDS

CUBA

St. Paul

Chicago

Detroit

Cleveland

Pittsburgh

Buffalo

Toronto

Montreal

Quebec

Boston

New York

Philadelphia

Washington

Baltimore

Richmond

Norfolk

Charleston

Savannah

Jacksonville

Atlanta

Memphis

New Orleans

Houston

Galveston

Dallas

Fort Worth

Kansas City

Omaha

Denver

Minneapolis

Duluth

Milwaukee

Indianapolis

Cincinnati

Louisville

Nashville

Birmingham

Mobile

Tampa

Miami

Key West

Havana

Nassau

Kingston

West from Greenwich

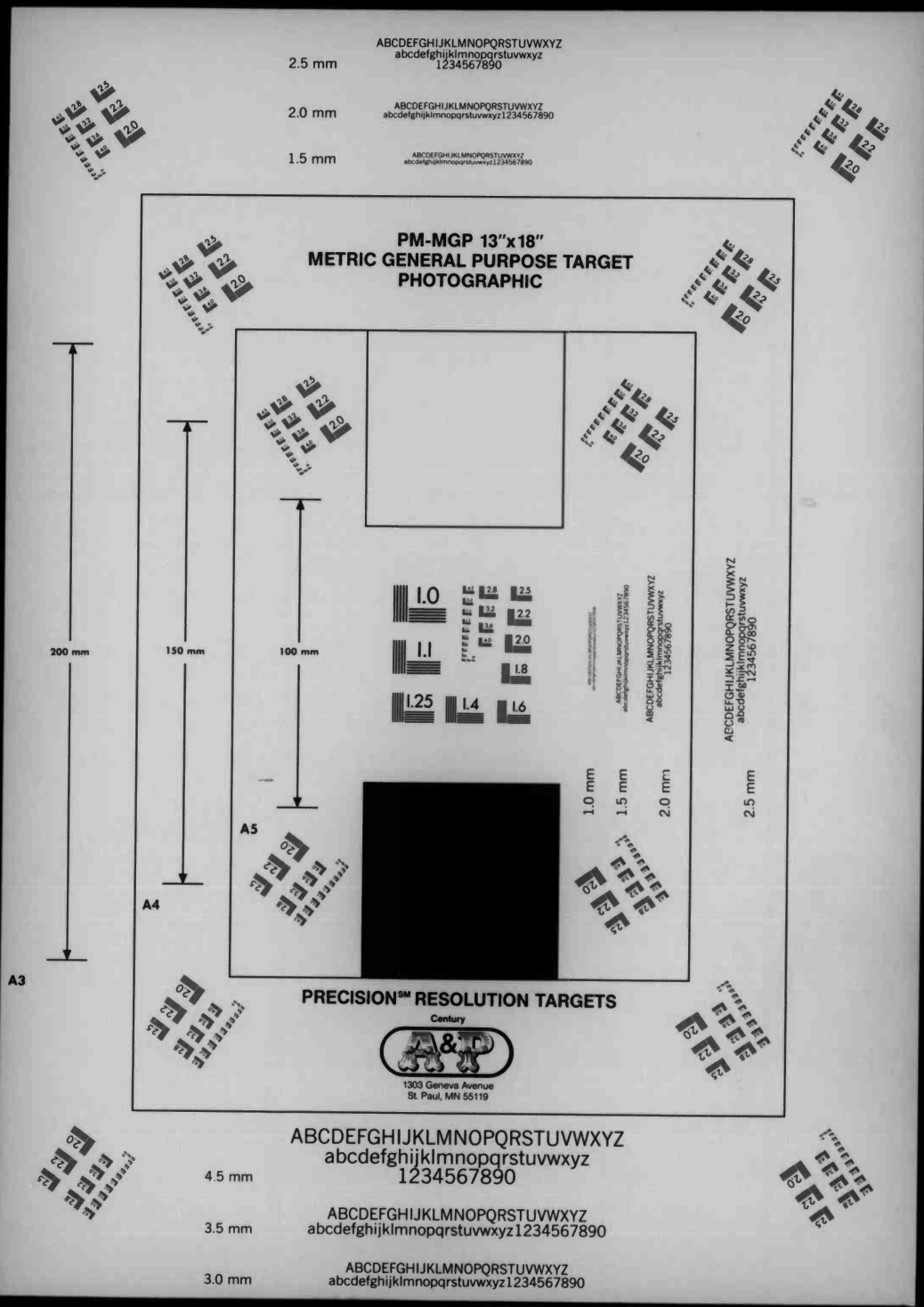
95° 90° 85° 80° 75°

C & G S Print 8432

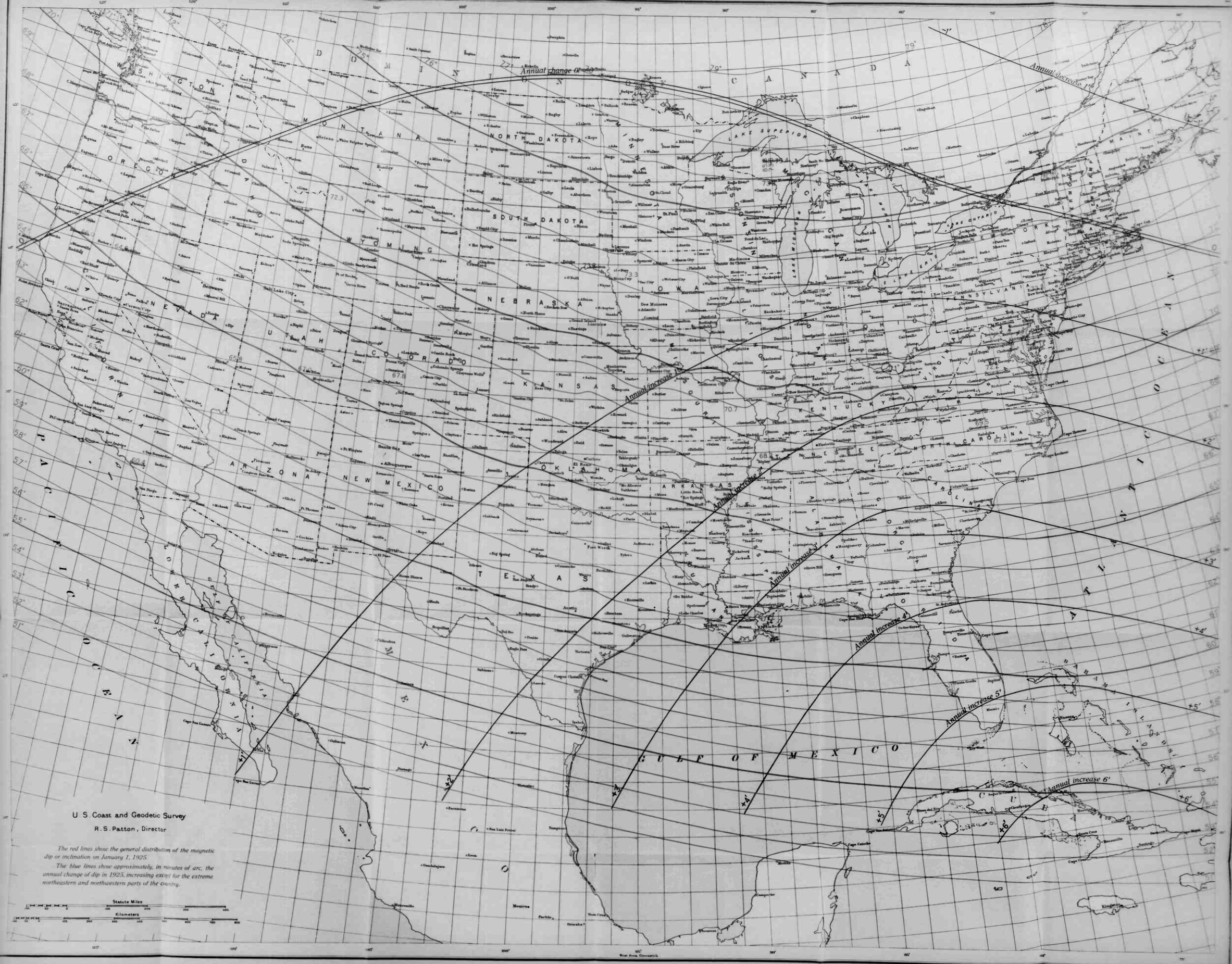
REDUCTION

RATIO

22:1


2.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
2.0 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890
1.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890
PM-MGP 13"x18"
METRIC GENERAL PURPOSE TARGET
PHOTOGRAPHIC
200 mm
150 mm
100 mm
A3
A4
A5
1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
1.0 mm
1.5 mm
2.0 mm
2.5 mm
PRECISION℠ RESOLUTION TARGETS
Century
A&P
1303 Geneva Avenue
St. Paul, MN 55119
4.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
3.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890
3.0 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

LINES OF EQUAL MAGNETIC DIP AND OF EQUAL ANNUAL CHANGE IN THE UNITED STATES FOR 1925



U. S. Coast and Geodetic Survey

R. S. Patton, Director

The red lines show the general distribution of the magnetic dip or inclination on January 1, 1925.

The blue lines show approximately, in minutes of arc, the annual change of dip in 1925, increasing except for the extreme northeastern and northwestern parts of the country.

Statute Miles

Kilometers

West from Greenwich

REDUCTION

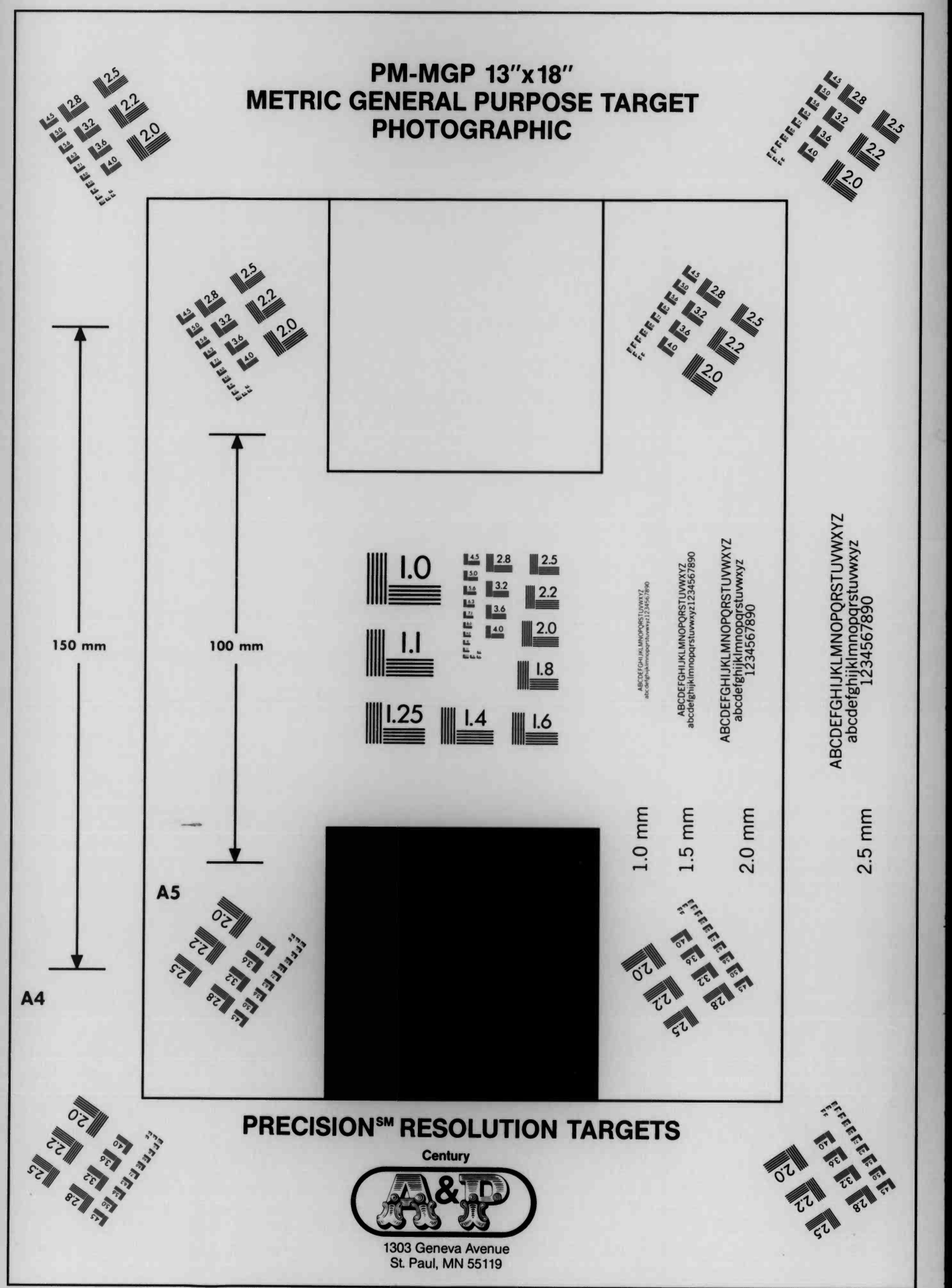
RATIO

12:1

2.0 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz1234567890

1.5 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz1234567890

PM-MGP 13″x18″
METRIC GENERAL PURPOSE TARGET
PHOTOGRAPHIC



PRECISION℠ RESOLUTION TARGETS

Century

A&D

1303 Geneva Avenue
St. Paul, MN 55119

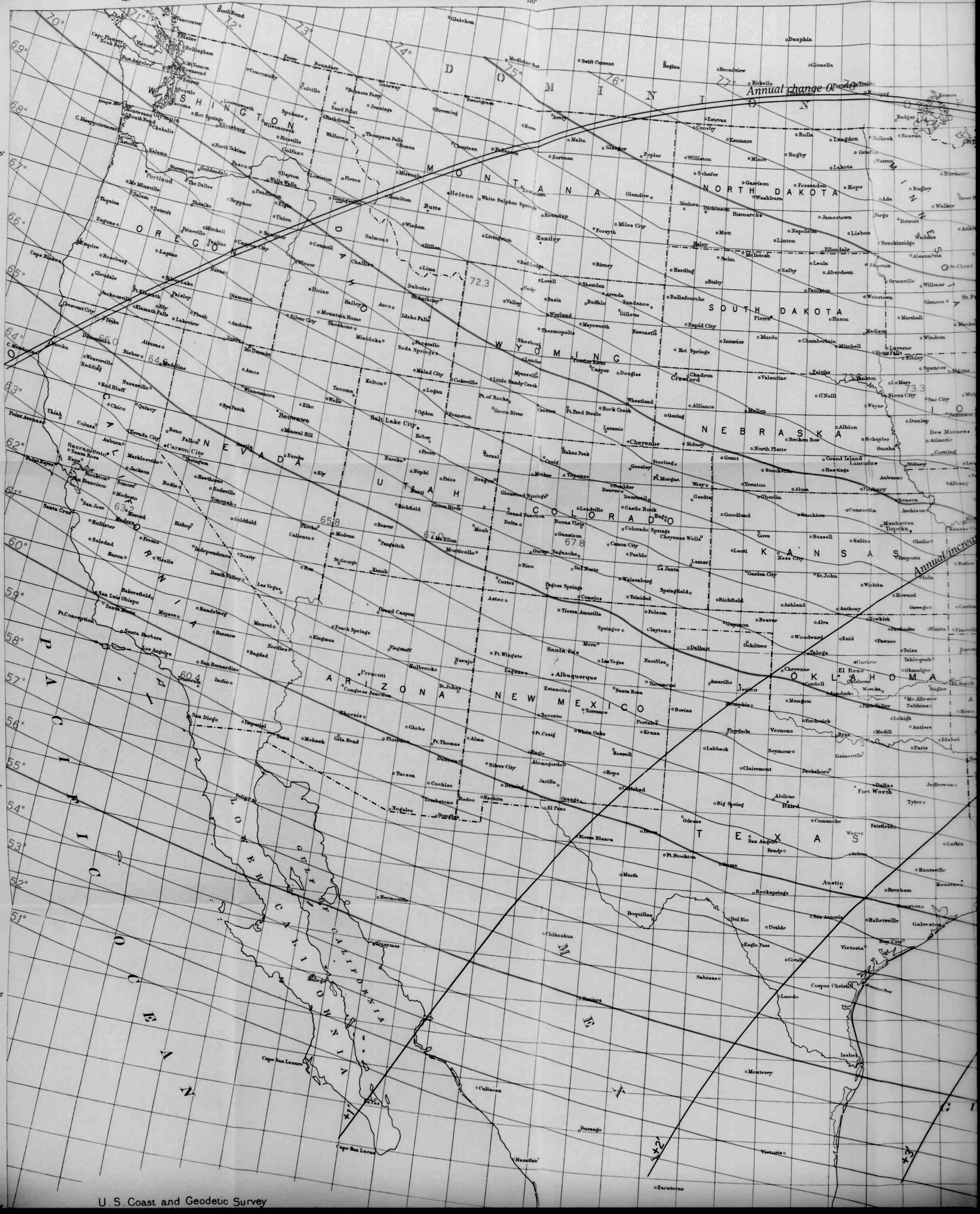
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

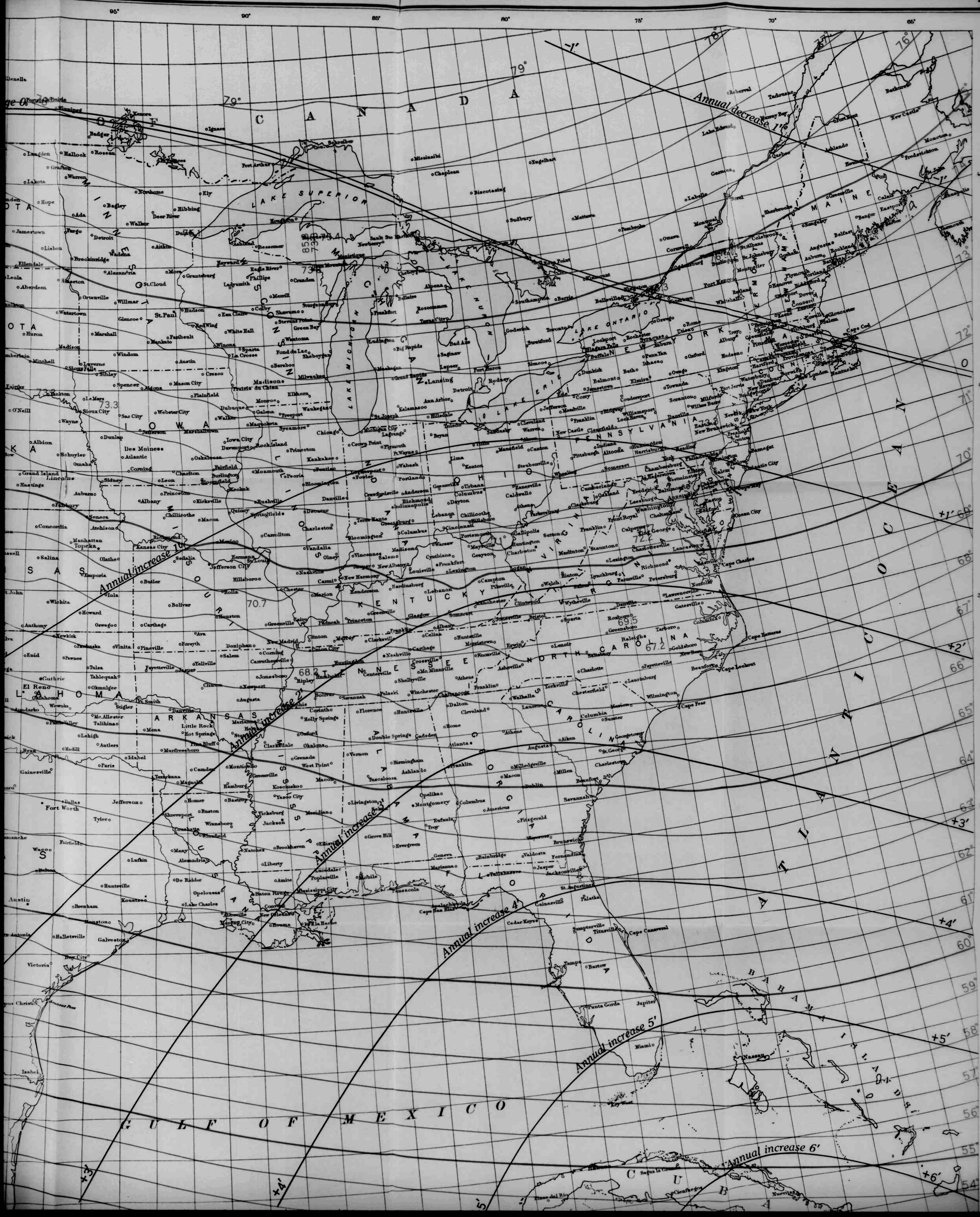
4.5 mm

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

3.5 mm

LINES OF EQUAL MAGNETIC DIP AND OF EQUAL ANNUAL


Annual change 0
Annual increase
72.3
66.0
64.6
65.8
67.0
63.2
67.8
60.4
73.3
+1'
+2'
+3'
DOMINION OF CANADA
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
COLORADO
ARIZONA
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
PACIFIC OCEAN
GULF OF CALIFORNIA
LOWER CALIFORNIA
Vancouver
Victoria
Seattle
Portland
Spokane
Salt Lake City
Cheyenne
Denver
Santa Fe
Phoenix
Helena
Butte
Boise
Reno
Sacramento
San Francisco
Los Angeles
San Diego
Chihuahua
Durango
Mazatlan
Hermosillo
Guaymas
Cape San Lucas
Cape San Lazaro
Cape Flattery
Cape Blanco
Point Arenas
Pt. Conception
Crescent City
Eureka
Astoria
Yaquina
Empire
Roseburg
Lapine
Burns
Klamath Falls
Lakeview
Pt. Klamath
Silver Lake
Paisley
Diamond
Jacksonville
Medford
Ashland
Yreka
Weaverville
Redding
Red Bluff
Susanville
Chico
Quincy
Ukiah
Colusa
Auburn
Nevada City
Placerville
Markleeville
Jackson
Napa
Santa Rosa
Stockton
Sonora
Modesto
Merced
Madera
Fresno
Hollister
San Jose
Santa Cruz
Soledad
Huron
Visalia
Bishop
Bodie
Hawthorne
Sodaville
Tonopah
Goldfield
Independence
Beatty
Death Valley
Las Vegas
Bakersfield
San Luis Obispo
Santa Maria
Santa Barbara
Los Angeles
Pt. Conception
Mojave
Randsburg
Barstow
Needles
Manvel
Bagdad
San Bernardino
Temecula
Indio
San Diego
Imperial
Yuma
Mohawk
Gila Bend
Florence
Phoenix
Prescott
Congress Junction
Peach Springs
Kingman
Grand Canyon
Flagstaff
Holbrooke
Navajo
Ft. Wingate
Zuni
Laguna
Albuquerque
Santa Rosa
Tucumcari
Nara Visa
Las Vegas
Santa Fe
Mora
Springer
Clayton
Raton
Folsom
Tierra Amarilla
Cortez
Pagosa Springs
Conejos
Trinidad
Walsenburg
La Junta
Rico
Del Norte
Saguache
Ouray
Canon City
Pueblo
Lamar
Springfield
Richfield
Ashland
Anthony
Howard
Oswego
Wichita
Garden City
St. John
Ness City
Lecti
Russell
Salina
Emporia
Topeka
Manhattan
Concordia
Atchison
Goodland
Smackton
Gove
Oberlin
Cheyenne Wells
Hugo
Colorado Springs
Castle Rock
Leadville
Buena Vista
Gunnison
Grand Junction
Delta
Glenwood Springs
Denver
Boulder
Deertrail
Gerdts
Trenton
Alma
Kirwin
Osborne
Concordia
Clyde
Abilene
Baird
Big Spring
Odessa
Comanche
Fairfield
Waco
San Angelo
Brady
Ft. Stockton
Ozona
Marfa
Austin
Rocksprings
Houston
Huntsville
Brenham
Galveston
Halletsville
San Antonio
Del Rio
Uvalde
Eagle Pass
Victoria
Bay City
Cotulla
Sabinas
Corpus Christi
Laredo
Isabel
Monterey
Victoria
Zacatecas
Jacksboro
Fort Worth
Dallas
Jefferson
Tyler
Lufkin
Wichita Falls
Vernon
Floydada
Lubbock
Seymour
Claremont
Jacksboro
Paris
Gainesville
Madill
Ryan
Antlers
Lehigh
Fredrick
Tishomingo
Ardmore
Wewoka
Cordell
Chickasha
Oklahoma
El Reno
Guthrie
Tahlequah
Okmulgee
Muskogee
Tulsa
Pawnee
Pawhuska
Vinita
Coffeyville
Ochiltree
Guymon
Beaver
Alva
Woodward
Enid
Delhart
Amarillo
Jerico
Memphis
Mangum
Chevenne
Cordell
Sugler
Ft. Smith
Talihina
Mena
Paris Valley
Mc. Allester
Texarkana
Pine Bluff
Little Rock
Hot Springs
Arkadelphia
Camden
Shreveport
Monroe
Natchitoches
Alexandria
Opelousas
Lafayette
New Orleans
Baton Rouge
Natchez
Vicksburg
Jackson
Meridian
Hattiesburg
Mobile
Pensacola
Tallahassee
Apalachicola
Tampa
Key West
Miami
Palm Beach
Jacksonville
Savannah
Charleston
Wilmington
Raleigh
Norfolk
Richmond
Washington
Baltimore
Philadelphia
New York
Boston
Portland
Augusta
Bangor
Eastport
St. John
Fredericton
Moncton
Halifax
Sydney
Pictou
Charlottetown
Yarmouth
Annapolis
Digby
Windsor
Truro
Amherst
Shediac
Chatham
Dalhousie
Campbellton
Bathurst
Gaspe
Rimouski
Riviere du Loup
Quebec
Three Rivers
Montreal
Ottawa
Kingston
Toronto
Hamilton
Niagara
Port Hope
Cobourg
Belleville
Peterborough
Lindsay
Orillia
Barrie
Collingwood
Owen Sound
Sarnia
London
Stratford
Woodstock
Brantford
Guelph
Galt
Berlin
Waterloo
Preston
Hespeler
Paris
Simcoe
Dunnville
Port Colborne
St. Catharines
Welland
Thorold
Grimsby
Dundas
Oakville
Brampton
Georgetown
Milton
Acton
Orangeville
Mount Forest
Palmerston
Listowel
Wingham
Goderich
Clinton
Seaforth
Exeter
Hensall
Parkhill
Strathroy
Chatham
Wallaceburg
Petrolia
Wyoming
Forest
Alvinston
Glencoe
Dutton
Aylmer
Tillsonburg
Simcoe
Port Dover
Delhi
Waterford
Brantford
Paris
Ingersoll
Woodstock
Tavistock
New Hamburg
Elmira
Arthur
Fergus
Elora
Alma
Drayton
Mount Forest
Harriston
Mount Elgin
Norwich
Tillsonburg
Port Dover
Simcoe


Annual decrease 1'
Annual increase 1'
Annual increase 2'
Annual increase 3'
Annual increase 4'
Annual increase 5'
Annual increase 6'
CANADA
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
LAKE ONTARIO
MINNESOTA
IOWA
WISCONSIN
MICHIGAN
NEW YORK
MAINE
VERMONT
NEW HAMPSHIRE
MASSACHUSETTS
CONNECTICUT
RHODE ISLAND
PENNSYLVANIA
NEW JERSEY
MARYLAND
DELAWARE
VIRGINIA
WEST VIRGINIA
OHIO
KENTUCKY
TENNESSEE
NORTH CAROLINA
SOUTH CAROLINA
GEORGIA
FLORIDA
ALABAMA
MISSISSIPPI
LOUISIANA
ARKANSAS
MISSOURI
KANSAS
NEBRASKA
SOUTH DAKOTA
NORTH DAKOTA
OKLAHOMA
TEXAS
ATLANTIC OCEAN
GULF OF MEXICO
BAHAMA ISLANDS
CUBA
95°
90°
85°
80°
75°
70°
65°
45°
40°
35°
30°
25°

U.S. Coast and Geodetic Survey

R.S. Patton, Director

The red lines show the general distribution of the magnetic dip or inclination on January 1, 1925.

The blue lines show approximately, in minutes of arc, the annual change of dip in 1925, increasing except for the extreme northeastern and northwestern parts of the country.

Statute Miles

100 50 0 100 200 300 400

Kilometers

100 50 0 100 200 300 400 500 600 700 800

Annual increase

72.3 73.3 67.8 67.0 65.8 63.2 66.0 64.6 60.4

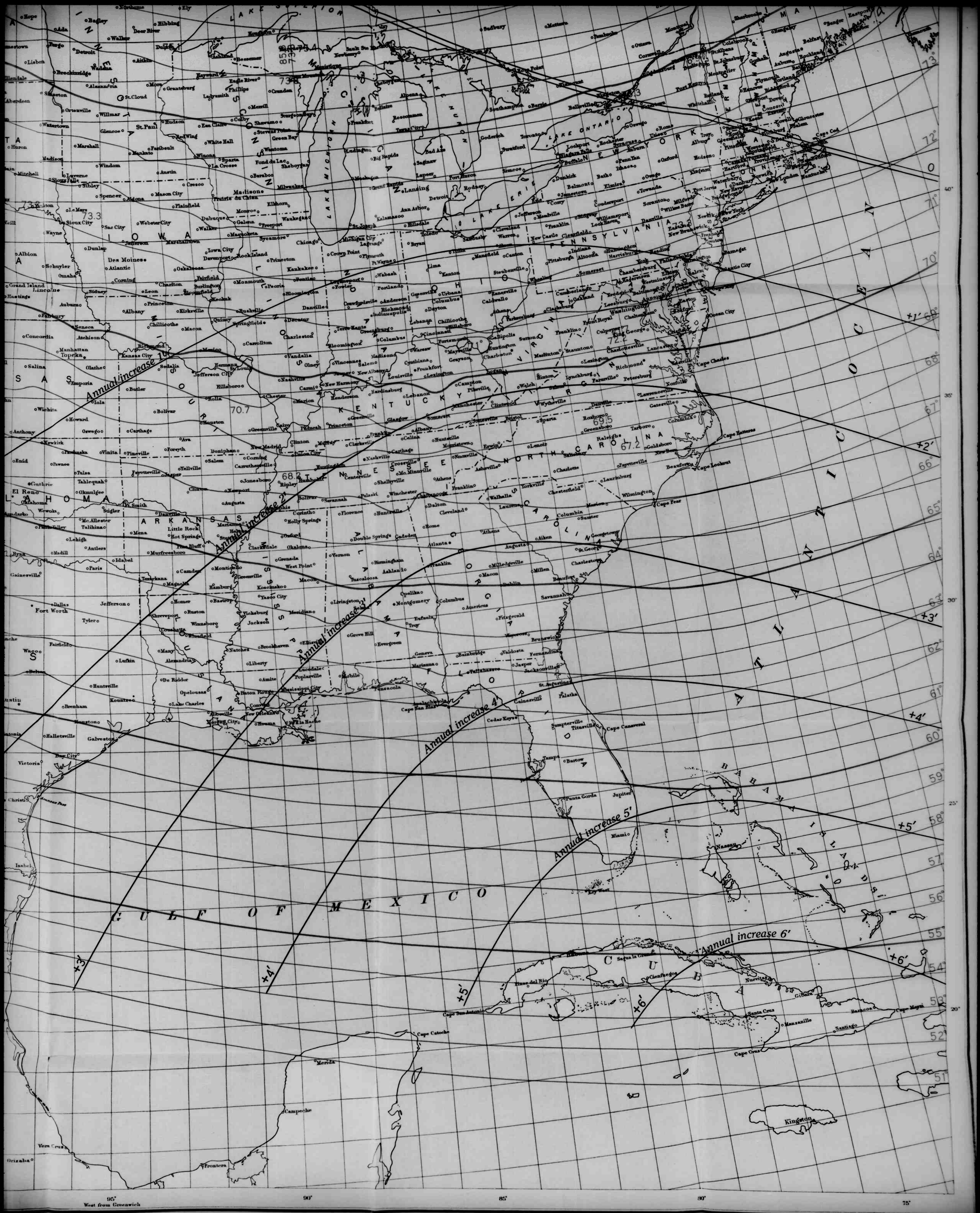
MONTANA NORTH DAKOTA MINNESOTA SOUTH DAKOTA IOWA WYOMING NEBRASKA OREGON NEVADA UTAH COLORADO KANSAS CALIFORNIA ARIZONA NEW MEXICO OKLAHOMA TEXAS PACIFIC OCEAN GULF OF CALIFORNIA LOWER CALIFORNIA

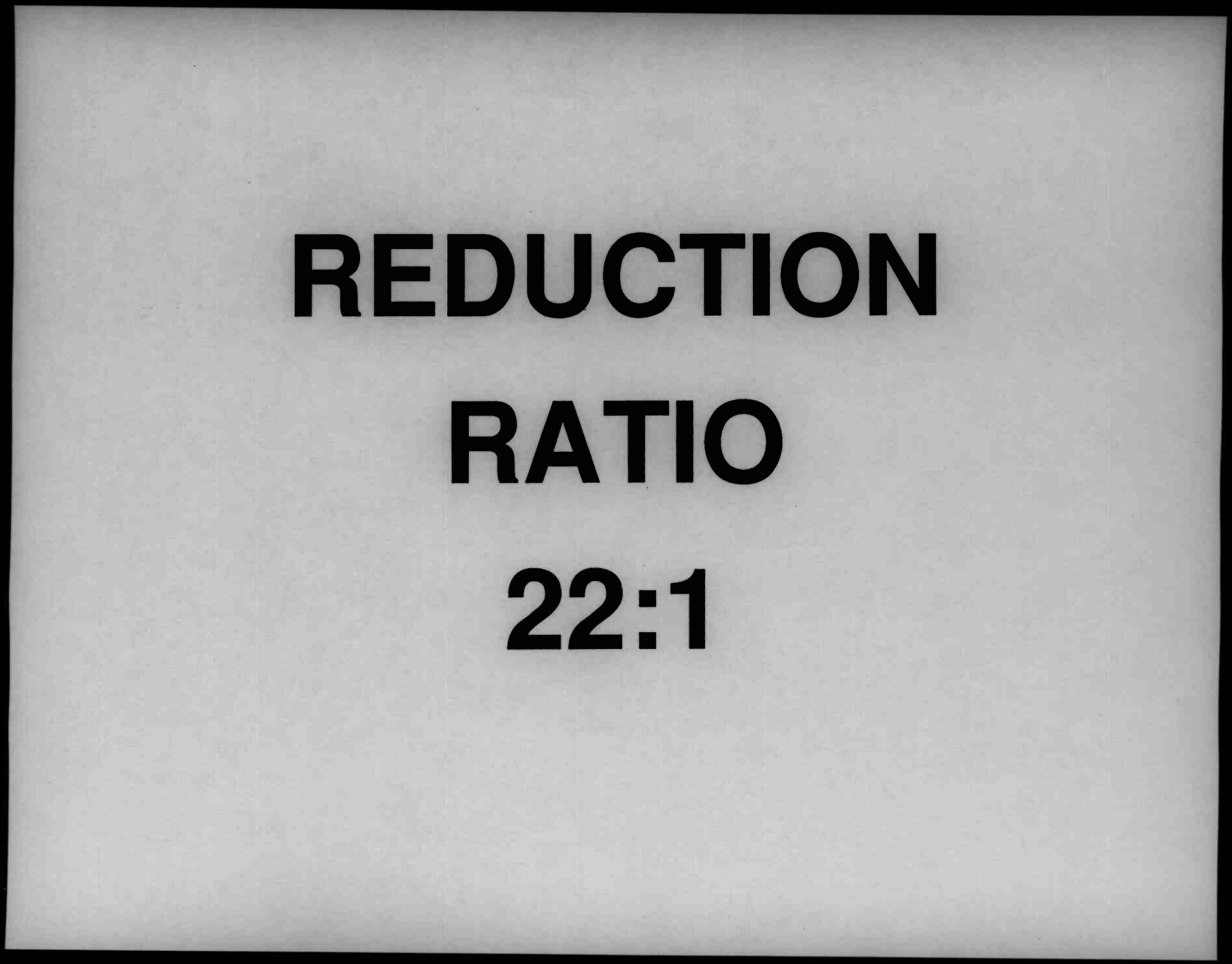
Portland, Salem, Eugene, Roseburg, Medford, Klamath Falls, Lakeview, Reno, Carson City, Fallon, Winnemucca, Elko, Ely, Las Vegas, Boise, Pocatello, Idaho Falls, Twin Falls, Salt Lake City, Ogden, Provo, Cheyenne, Laramie, Casper, Rock Springs, Denver, Colorado Springs, Pueblo, Grand Junction, Durango, Albuquerque, Santa Fe, Roswell, Amarillo, Lubbock, Abilene, Fort Worth, Dallas, Austin, San Antonio, Houston, El Paso, Phoenix, Tucson, Prescott, Flagstaff, Yuma, San Diego, Los Angeles, San Francisco, Sacramento, Fresno, Bakersfield, Santa Barbara, Needles, Kingman, Grand Canyon, Hermosillo, Guaymas, Mazatlan, Culiacan, Durango, Zacatecas, San Luis Potosi, Tampico, Monterey, Saltillo, Chihuahua, Ciudad Juarez, Guadalajara, Leon, Mexico, Puebla, Vera Cruz, Orizaba, Manzanillo, Cape San Lucas, Cape San Lazaro, Ensenada, Tijuana, Mexicali, Nogales, Douglas, Sierra Blanca, Del Rio, Eagle Pass, Laredo, Corpus Christi, Brownsville, Galveston, Houston, Beaumont, Shreveport, Little Rock, Memphis, Kansas City, Omaha, Sioux City, Sioux Falls, Fargo, Bismarck, Minot, Williston, Miles City, Billings, Helena, Butte, Missoula, Spokane, Seattle, Tacoma, Portland, Astoria, Medford, Crescent City, Eureka, Redding, Sacramento, Stockton, San Jose, Monterey, Santa Cruz, Fresno, Bakersfield, Barstow, Needles, Yuma, Phoenix, Tucson, Douglas, Nogales, Hermosillo, Guaymas, Mazatlan, Culiacan, Durango, Zacatecas, San Luis Potosi, Tampico, Monterey, Saltillo, Chihuahua, Ciudad Juarez, Guadalajara, Leon, Mexico, Puebla, Vera Cruz, Orizaba, Manzanillo, Cape San Lucas, Cape San Lazaro, Ensenada, Tijuana, Mexicali

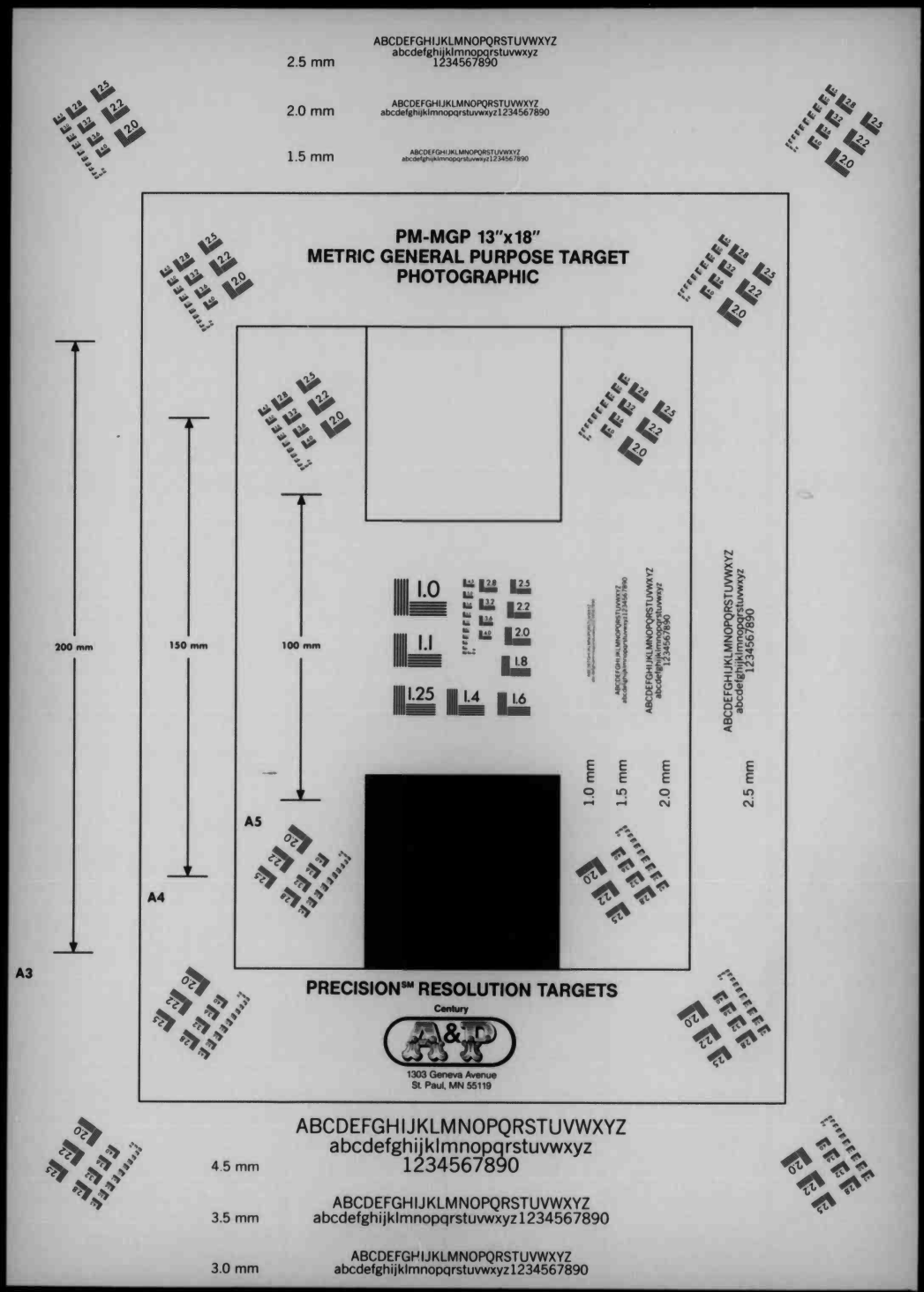
+1° +2° +3°

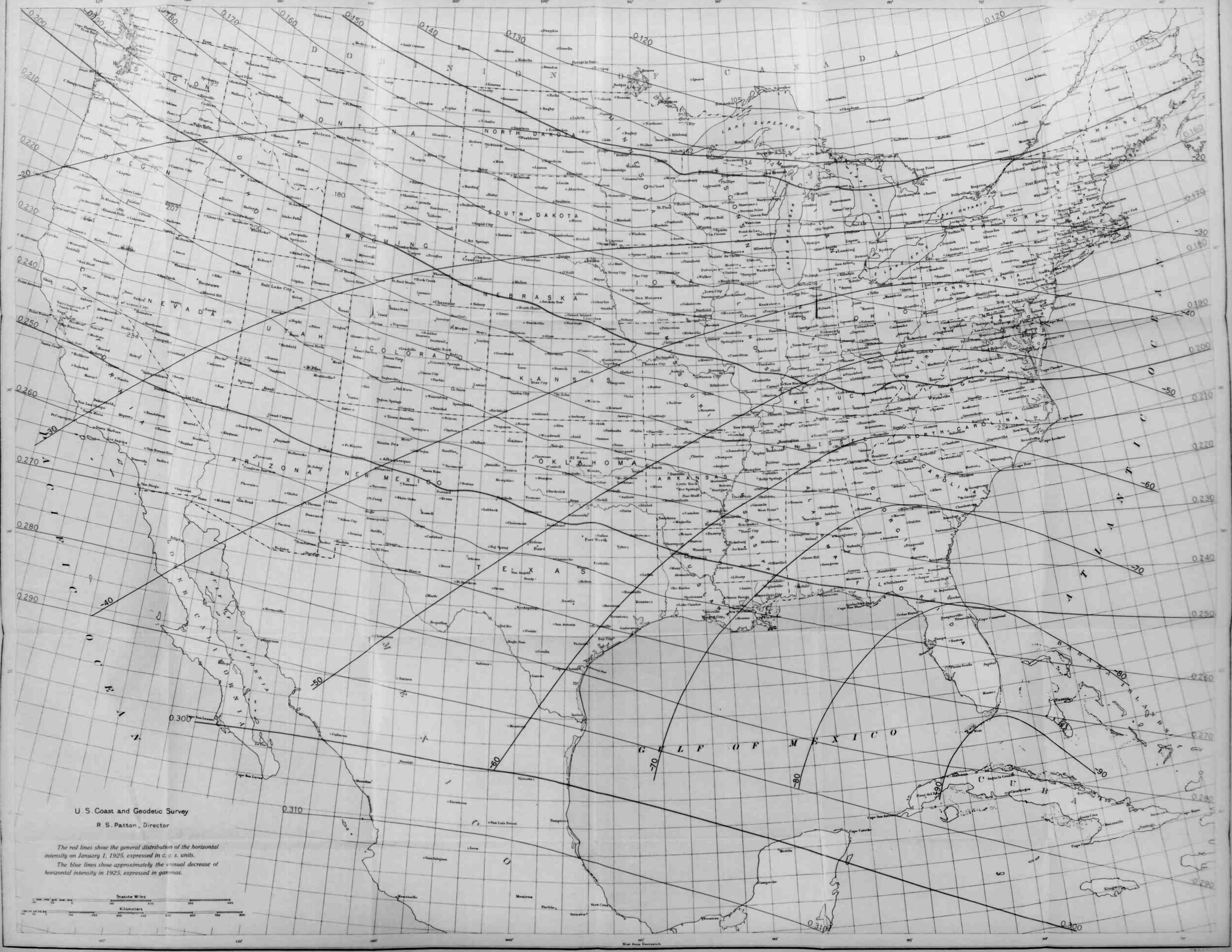
115° 110° 105° 100° 95° West from Greenwich

60° 55° 50° 45° 40° 35° 30° 25° 20°


Annual increase 1'
Annual increase 2'
Annual increase 3'
Annual increase 4'
Annual increase 5'
Annual increase 6'
+1'
+2'
+3'
+4'
+5'
+6'
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
LAKE ONTARIO
ATLANTIC OCEAN
GULF OF MEXICO
BAHAMA ISLANDS
CUBA
Cape Catoche
Merida
Campeche
Vera Cruz
Orizaba
Frontera
Cape San Antonio
Isle of Pines
Cienfuegos
Santa Cruz
Manzanillo
Nuevitas
Gibara
Santiago
Cape Cruz
Barracoa
Cape Maysi
Kingston
Cape San Blas
Cape Canaveral
Cape Hatteras
Cape Lookout
Cape Fear
Cape Charles
Cape Cod
Key West
Nassau
Miami
Tampa
Jacksonville
Savannah
Charleston
Wilmington
Norfolk
Richmond
Washington
Baltimore
Philadelphia
New York
Boston
Portland
Bangor
Montreal
Ottawa
Toronto
Buffalo
Detroit
Chicago
Milwaukee
Minneapolis
Duluth
Winnipeg
Sault Ste Marie
Port Arthur
Fort William
Kansas City
St. Louis
New Orleans
Galveston
Houston
Dallas
Fort Worth
Oklahoma
Omaha
Denver
Cheyenne
Salt Lake City
Los Angeles
San Francisco
Seattle
Portland
Vancouver
Winnipeg
Regina
Calgary
Edmonton
Prince Albert
Saskatoon
Moose Jaw
Medicine Hat
Swift Current
Battleford
Prince Rupert
Victoria
Nelson
Kamloops
Prince George
Dawson
Whitehorse
Fort Simpson
Fort Nelson
Fort Smith
Yellowknife
Great Slave Lake
Great Bear Lake
Hudson Bay
James Bay
Moosonee
Cochrane
Timmins
Sudbury
North Bay
Ottawa
Kingston
Belleville
Toronto
Hamilton
London
Windsor
Sarnia
Owen Sound
Collingwood
Barrie
Orillia
Peterborough
Lindsay
Oshawa
Brockville
Cornwall
Montreal
Quebec
Sherbrooke
Three Rivers
Chicoutimi
Roberval
Lake St. John
Rimouski
Matane
Gaspe
Fredericton
St. John
Moncton
Halifax
Sydney
Charlottetown
Summerside
Yarmouth
Digby
Annapolis
Truro
Pictou
New Glasgow
Amherst
Sackville
Edmundston
Woodstock
Grand Falls
Bathurst
Campbellton
Dalhousie
Newcastle
Chatham
Fredericton
Portland
Bangor
Augusta
Rockland
Belfast
Eastport
Calais
Houlton
Presque Isle
Caribou
Fort Kent
Madawaska
Edmundston
Rivière du Loup
Cabano
Notre Dame du Lac
Temiscouata
Lac Baker
Grand Falls
Woodstock
Florenceville
Hartland
Perth
Andover
Plaster Rock
Doaktown
Boiestown
Blackville
Chatham
Newcastle
Moncton
Sackville
Amherst
Springhill
Parrsboro
Truro
Windsor
Kentville
Wolfville
Digby
Annapolis
Yarmouth
Shelburne
Liverpool
Bridgewater
Lunenburg
Mahone Bay
Chester
Halifax
Dartmouth
Sydney
Glace Bay
North Sydney
Port Hawkesbury
Antigonish
New Glasgow
Pictou
Stellarton
Truro
Amherst
Tidnish
Pugwash
Wallace
Tatamagouche
Malagash
Port Hood
Mabou
Inverness
Margaree
Baddeck
Whycocomagh
Iona
Sydney
Louisburg
Arichat
Canso
Guysborough
Antigonish
Tracadie
Heatherton
Port Hawkesbury
Mulgrave
Pictou
Stellarton
Westville
New Glasgow
Trenton
Pictou
Tatamagouche
Wallace
Pugwash
Tidnish
Amherst
Sackville
Dorchester
Memramcook
Moncton
Hillsborough
Riverside
Albert
Hopewell Cape
Harvey
Fredericton
Oromocto
Gagetown
Jemseg
Grand Lake
Minto
Chipman
Newcastle
Chatham
Douglastown
Loggieville
Nelson
Millerton


REDUCTION
RATIO
22:1


2.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
2.0 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890
1.5 mm
PM-MGP 13"x18"
METRIC GENERAL PURPOSE TARGET
PHOTOGRAPHIC
200 mm
150 mm
100 mm
A3
A4
A5
1.0
1.1
1.25
1.4
1.6
1.8
1.0 mm
1.5 mm
2.0 mm
2.5 mm
PRECISION℠ RESOLUTION TARGETS
Century
A&D
1303 Geneva Avenue
St. Paul, MN 55119
4.5 mm
3.5 mm
3.0 mm

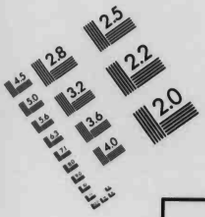

DOMINION OF CANADA
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
NEBRASKA
IOWA
NEVADA
UTAH
COLORADO
KANSAS
OREGON
ARIZONA
NEW MEXICO
OKLAHOMA
TEXAS
ARKANSAS
KENTUCKY
TENNESSEE
MISSISSIPPI
LOUISIANA
PENNSYLVANIA
NEW YORK
MAINE
LAKE SUPERIOR
LAKE ONTARIO
GULF OF MEXICO
ATLANTIC OCEAN
CUBA
BAHAMA ISLANDS
0.120
0.130
0.140
0.150
0.160
0.170
0.180
0.190
0.200
0.210
0.220
0.230
0.240
0.250
0.260
0.270
0.280
0.290
0.300
0.310
-20
-30
-40
-50
-60
-70
-80
-90
105
134
142
155
176
180
200
207
229
234
U. S. Coast and Geodetic Survey
R. S. Patton, Director
The red lines show the general distribution of the horizontal intensity on January 1, 1925, expressed in C. G. S. units.
The blue lines show approximately the annual decrease of horizontal intensity in 1925, expressed in gammas.
Statute Miles
Kilometers
West from Greenwich

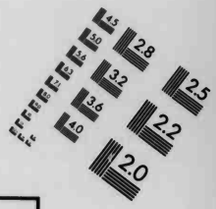
REDUCTION RATIO 12:1

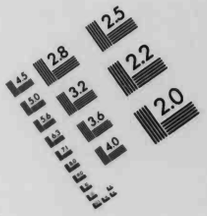
2.0 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz1234567890

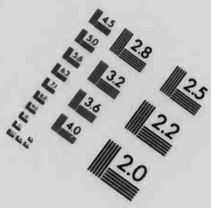
1.5 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz1234567890

PM-MGP 13"x18"
METRIC GENERAL PURPOSE TARGET
PHOTOGRAPHIC



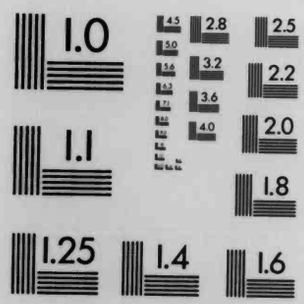






150 mm

100 mm



ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz1234567890

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz1234567890

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 1234567890

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 1234567890

1.0 mm

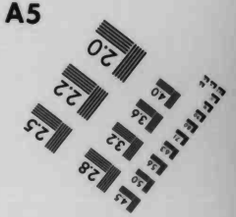
1.5 mm

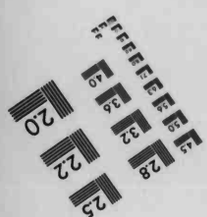
2.0 mm

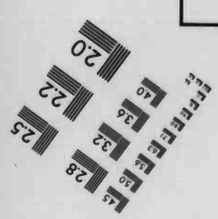
2.5 mm

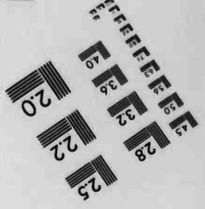
A5

A4









PRECISION℠ RESOLUTION TARGETS

Century

1303 Geneva Avenue
St. Paul, MN 55119

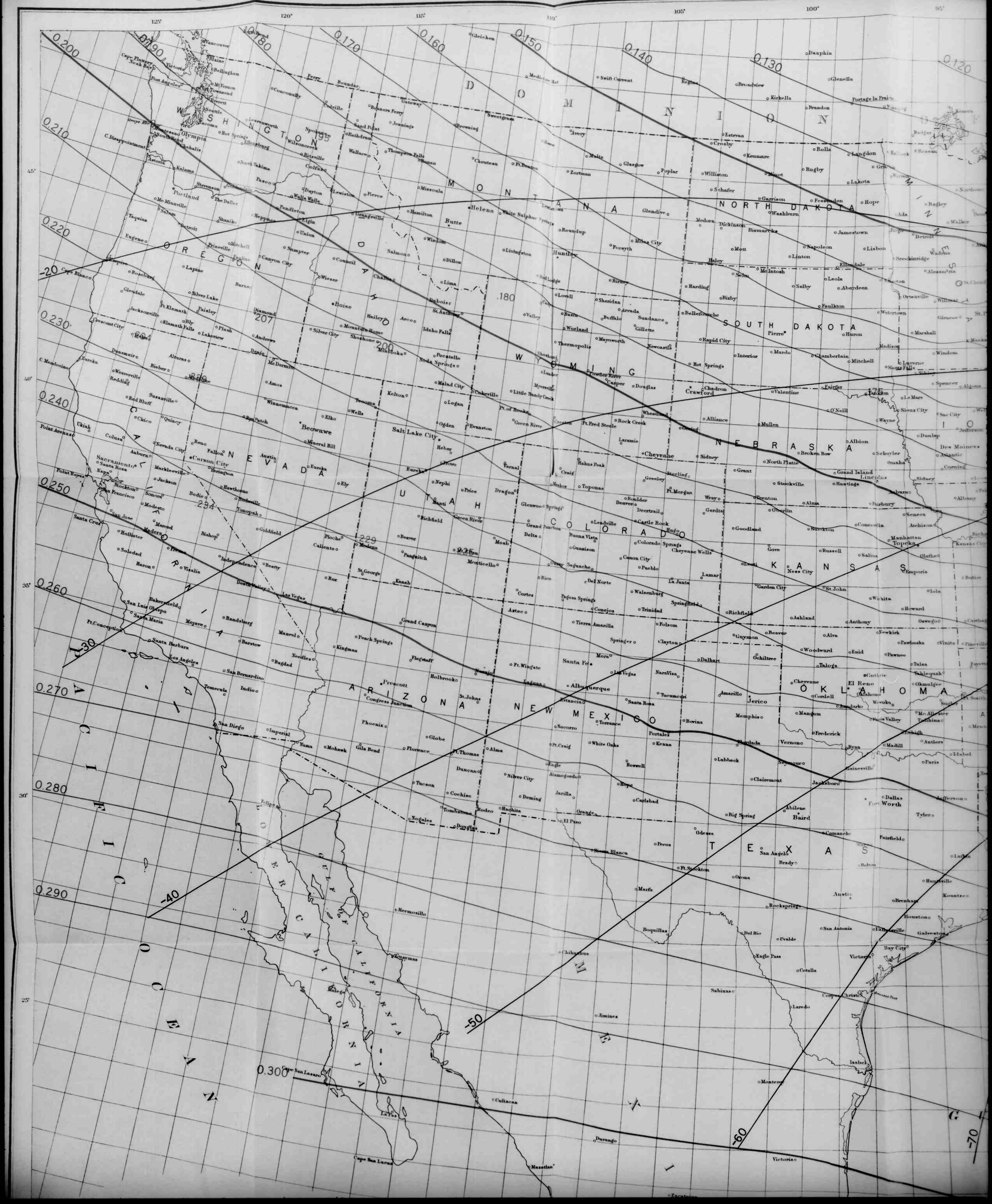
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

4.5 mm

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

3.5 mm

LINES OF EQUAL MAGNETIC HORIZONTAL INTENSITY AND OF EQU


0.200
0.190
0.180
0.170
0.160
0.150
0.140
0.130
0.120
0.210
0.220
0.230
0.240
0.250
0.260
0.270
0.280
0.290
0.300
-20
-30
-40
-50
-60
-70
180
207
200
234
229
225
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
COLORADO
ARIZONA
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
DOMINION
Vancouver
Victoria
Seattle
Tacoma
Olympia
Spokane
Portland
Salem
Eugene
Boise
Salt Lake City
Reno
Carson City
Sacramento
San Francisco
Los Angeles
San Diego
Phoenix
Tucson
Albuquerque
Santa Fe
El Paso
Denver
Cheyenne
Helena
Butte
Billings
Bismarck
Fargo
Minot
Williston
Regina
Swift Current
Medicine Hat
Calgary
Edmonton
Winnipeg
Dauphin
Brandon
Portage la Prairie
Moosomin
Estevan
Weyburn
Moose Jaw
Saskatoon
Prince Albert
Battleford
Rosetown
Kindersley
Lloydminster
Vancouver Island
Cape Flattery
Neah Bay
Port Angeles
Bellingham
Blaine
Mt. Vernon
Everett
Olympia
Aberdeen
Hoquiam
Chehalis
Centralia
Kelso
Longview
Vancouver
Walla Walla
Pendleton
The Dalles
Hood River
Astoria
Kalama
Stevenson
Goldendale
Yakima
Ellensburg
Wenatchee
Leavenworth
Hot Springs
Wilsonscreek
Ritzville
Colfax
Pullman
Lewiston
Clarkston
Grangeville
Orofino
Lewiston
Moscow
Coeur d'Alene
Kellogg
Wallace
Mullan
Pierce
Missoula
Hamilton
Bitterroot
Darby
Anaconda
Deer Lodge
Dillon
Wisdom
Salmon
Challis
Mackay
Arco
Idaho Falls
Blackfoot
Pocatello
Soda Springs
Preston
Malad City
Cokeville
Montpelier
Paris
Bear Lake
Logan
Ogden
Evanston
Kemmerer
Green River
Rock Springs
Rawlins
Laramie
Cheyenne
Wheatland
Douglas
Casper
Lander
Riverton
Thermopolis
Worland
Basin
Lovell
Cowley
Sheridan
Buffalo
Arvada
Sundance
Gillette
Newcastle
Hot Springs
Rapid City
Pierre
Huron
Mitchell
Madison
Watertown
Sioux Falls
Yankton
Vermillion
Sioux City
Le Mars
Spencer
Algona
Fairfield
Ottumwa
Albia
Chariton
Creston
Shenandoah
Clarinda
Red Oak
Atlantic
Audubon
Harlan
Council Bluffs
Omaha
Fremont
Schuyler
Columbus
Norfolk
Wayne
Broken Bow
North Platte
Grand Island
Lincoln
Hastings
Kearney
Holdrege
McCook
Oberlin
Goodland
Colby
Hays
Ellis
Russell
Salina
Abilene
Manhattan
Topeka
Lawrence
Kansas City
Leavenworth
Atchison
Concordia
Clay Center
Seneca
Marysville
Belleville
Superior
Hebron
Fairbury
Beatrice
Nebraska City
Falls City
Auburn
Tecumseh
Albion
Norfolk
Grant
Ogallala
Sidney
Alliance
Chadron
Crawford
Valentine
Mullen
Hyannis
Broadwater
Harrison
Gering
Scottsbluff
Bridgeport
Kimball
Sterling
Greeley
Ft. Morgan
Brush
Wray
Yuma
Burlington
Limon
Hugo
Colorado Springs
Pueblo
Canon City
Cripple Creek
Leadville
Castle Rock
Denver
Boulder
Longmont
Greeley
Fort Collins
Loveland
Estes Park
Glenwood Springs
Grand Junction
Delta
Montrose
Ouray
Silverton
Durango
Cortez
Mancos
Dolores
Rico
Telluride
Ridgway
Gunnison
Buena Vista
Salida
Canon City
Florence
Cañon City
Pueblo
Rocky Ford
La Junta
Lamar
Holly
Springfield
Trinidad
Raton
Las Vegas
Tucumcari
Clayton
Dalhart
Guymon
Beaver
Woodward
Enid
Alva
Newkirk
Pawhuska
Vinita
Pawnee
Ochiltree
Perryton
Amarillo
Jerico
Memphis
Clarendon
Wellington
Shamrock
McLean
Pampa
Canadian
Miami
Vernon
Quanah
Childress
Paducah
Crowell
Seymour
Wichita Falls
Henrietta
Archer City
Bowie
Decatur
Jacksboro
Graham
Throckmorton
Albany
Anson
Haskell
Stamford
Abilene
Sweetwater
Roscoe
Colorado
Big Spring
Snyder
Ira
Hermleigh
Loraine
Westbrook
Colorado
Odessa
Midland
Stanton
Lamesa
Tahoka
Brownfield
Morton
Levelland
Plainview
Hale Center
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Slaton
Post
Crosbyton
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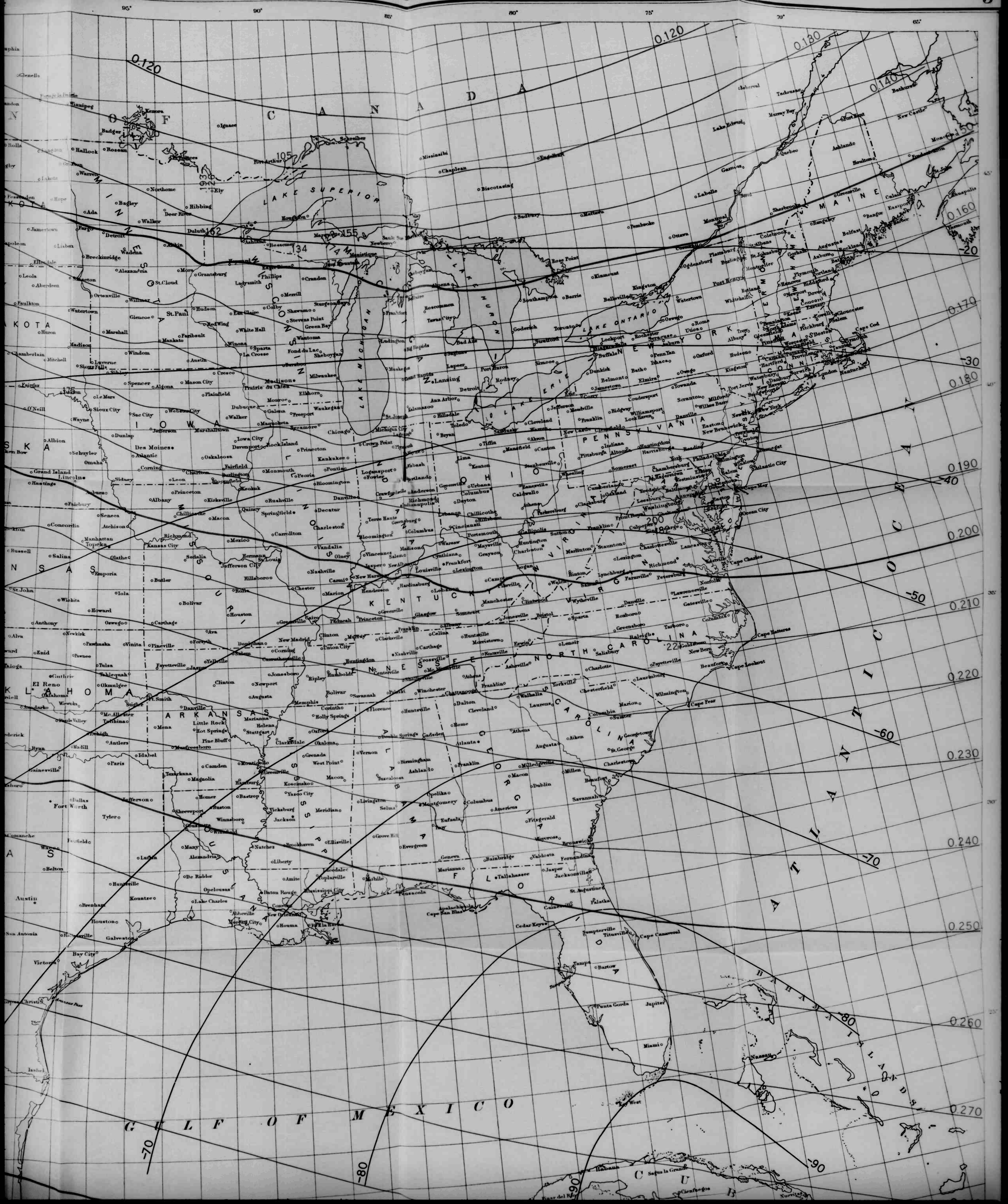
Matador
Turkey
Quitaque
Memphis
Hedley


95°
90°
85°
80°
75°
70°
65°
0.120
0.130
0.140
0.150
0.160
0.170
0.180
0.190
0.200
0.210
0.220
0.230
0.240
0.250
0.260
0.270
105
162
155
134
182
200
-20
-30
-40
-50
-60
-70
-80
-90
C A N A D A
L A K E S U P E R I O R
L A K E M I C H I G A N
L A K E H U R O N
L A K E E R I E
L A K E O N T A R I O
M A I N E
N E W Y O R K
P E N N S Y L V A N I A
O H I O
W E S T V I R G I N I A
K E N T U C K Y
T E N N E S S E E
N O R T H C A R O L I N A
S O U T H C A R O L I N A
G E O R G I A
F L O R I D A
A L A B A M A
M I S S I S S I P P I
L O U I S I A N A
A R K A N S A S
I O W A
M I S S O U R I
K A N S A S
O K L A H O M A
T E X A S
G U L F O F M E X I C O
A T L A N T I C O C E A N
B A H A M A I S L A N D S
C U B A
Winnipeg
Duluth
Minneapolis
St. Paul
Chicago
Detroit
Cleveland
Buffalo
Toronto
Montreal
Quebec
Boston
New York
Philadelphia
Baltimore
Washington
Pittsburgh
Cincinnati
Louisville
Nashville
Atlanta
Charleston
Jacksonville
Miami
Tampa
New Orleans
Houston
Dallas
Fort Worth
Kansas City
St. Louis
Omaha
Des Moines
Milwaukee
Indianapolis
Columbus
Memphis
Birmingham
Mobile
Havana
Nassau

U. S. Coast and Geodetic Survey

R. S. Patton, Director

The red lines show the general distribution of the horizontal intensity on January 1, 1925, expressed in c. g. s. units.

The blue lines show approximately the annual decrease of horizontal intensity in 1925, expressed in gammas.

Statute Miles 100 50 0 100 200 300 400

Kilometers 100 50 0 100 200 300 400 500 600 700 800

0.220 0.230 0.240 0.250 0.260 0.270 0.280 0.290 0.300 0.310

-20 -30 -40 -50 -60 -70

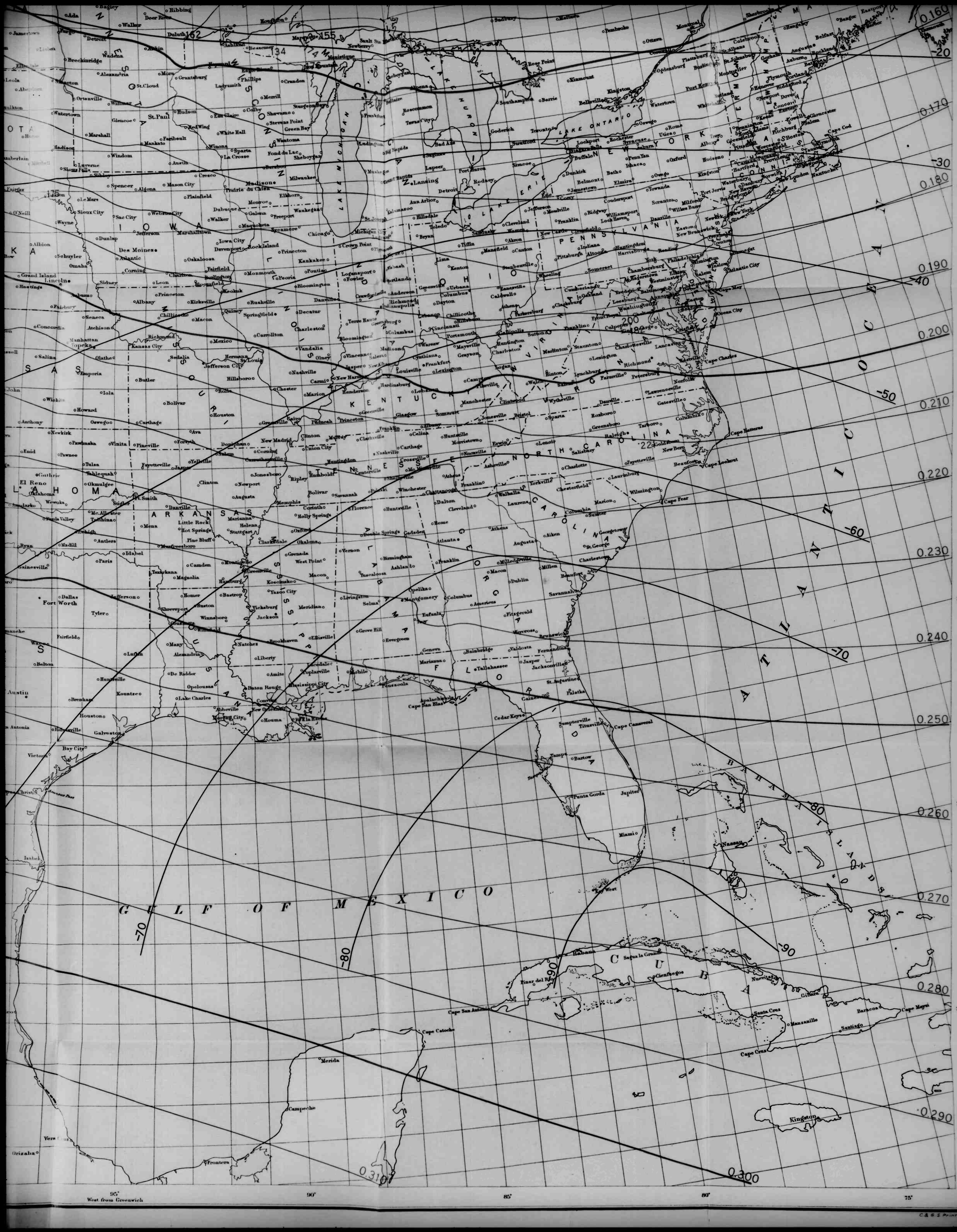
180 207 204 200 220 254 229 225 230

115° 110° 105° 100° 95° West from Greenwich

40° 35° 30° 25° 20°

OREGON CALIFORNIA NEVADA IDAHO MONTANA WYOMING UTAH ARIZONA COLORADO NEW MEXICO NORTH DAKOTA SOUTH DAKOTA NEBRASKA KANSAS OKLAHOMA TEXAS

PACIFIC OCEAN GULF OF CALIFORNIA

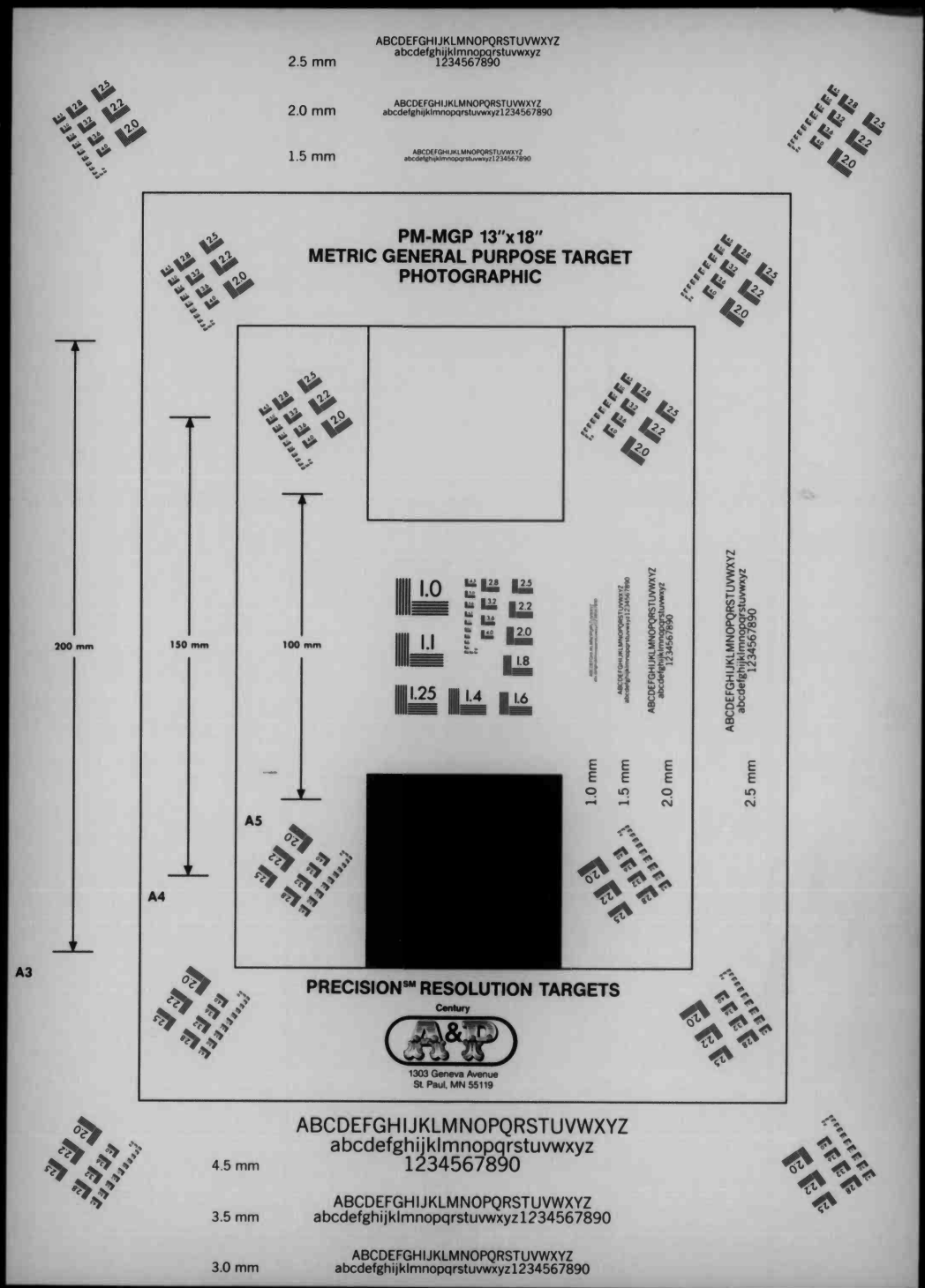


C & G S Print C-122

REDUCTION

RATIO

22:1


2.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
2.0 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890
1.5 mm
PM-MGP 13"x18"
METRIC GENERAL PURPOSE TARGET
PHOTOGRAPHIC
200 mm
150 mm
100 mm
A3
A4
A5
I.0
I.1
I.25
I.4
I.6
I.8
1.0 mm
1.5 mm
2.0 mm
2.5 mm
PRECISION℠ RESOLUTION TARGETS
Century
1303 Geneva Avenue
St. Paul, MN 55119
4.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
3.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890
3.0 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
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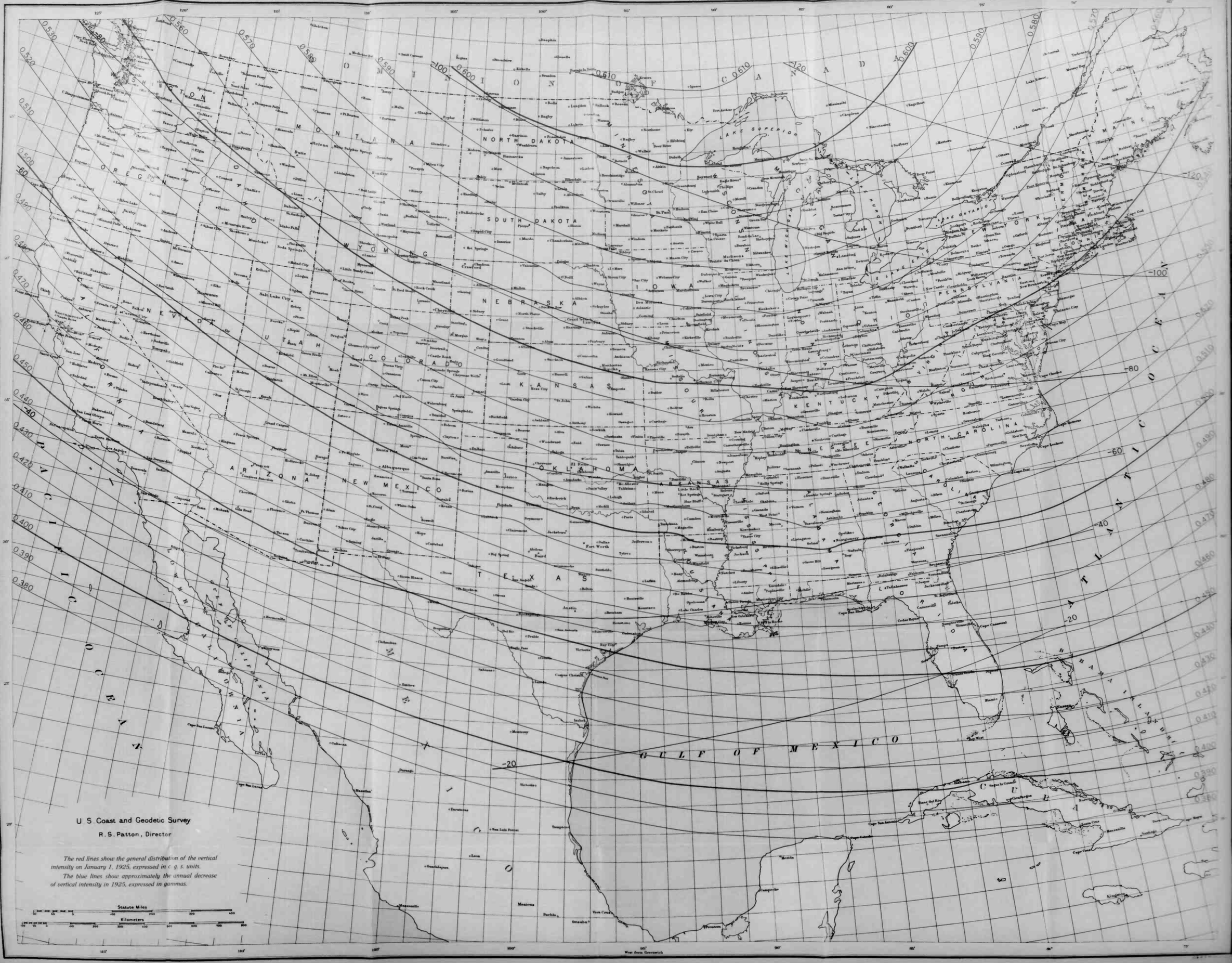
LINES OF EQUAL MAGNETIC VERTICAL INTENSITY AND OF EQUAL ANNUAL CHANGE IN THE UNITED STATES FOR 1925



REDUCTION RATIO 12:1

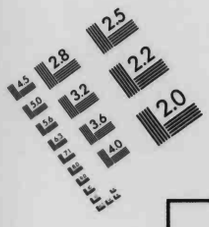
2.0 mm

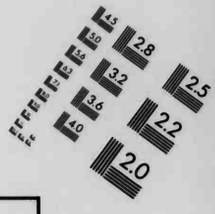
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

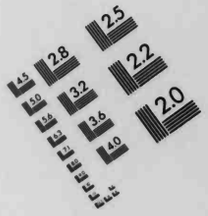
1.5 mm

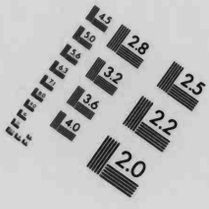
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

PM-MGP 13″x18″
METRIC GENERAL PURPOSE TARGET
PHOTOGRAPHIC



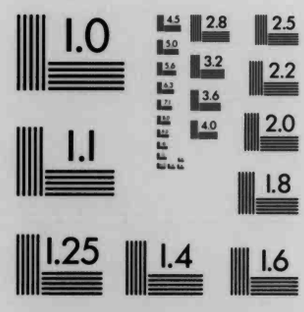






150 mm

100 mm



ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

1.0 mm

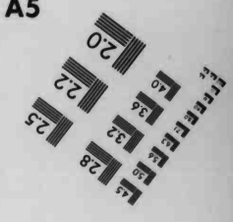
1.5 mm

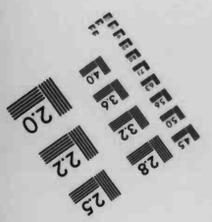
2.0 mm

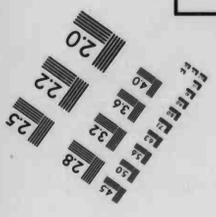
2.5 mm

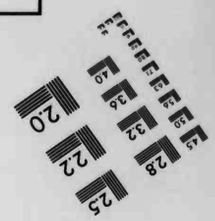
A5

A4









PRECISION℠ RESOLUTION TARGETS

Century

A&P

1303 Geneva Avenue
St. Paul, MN 55119

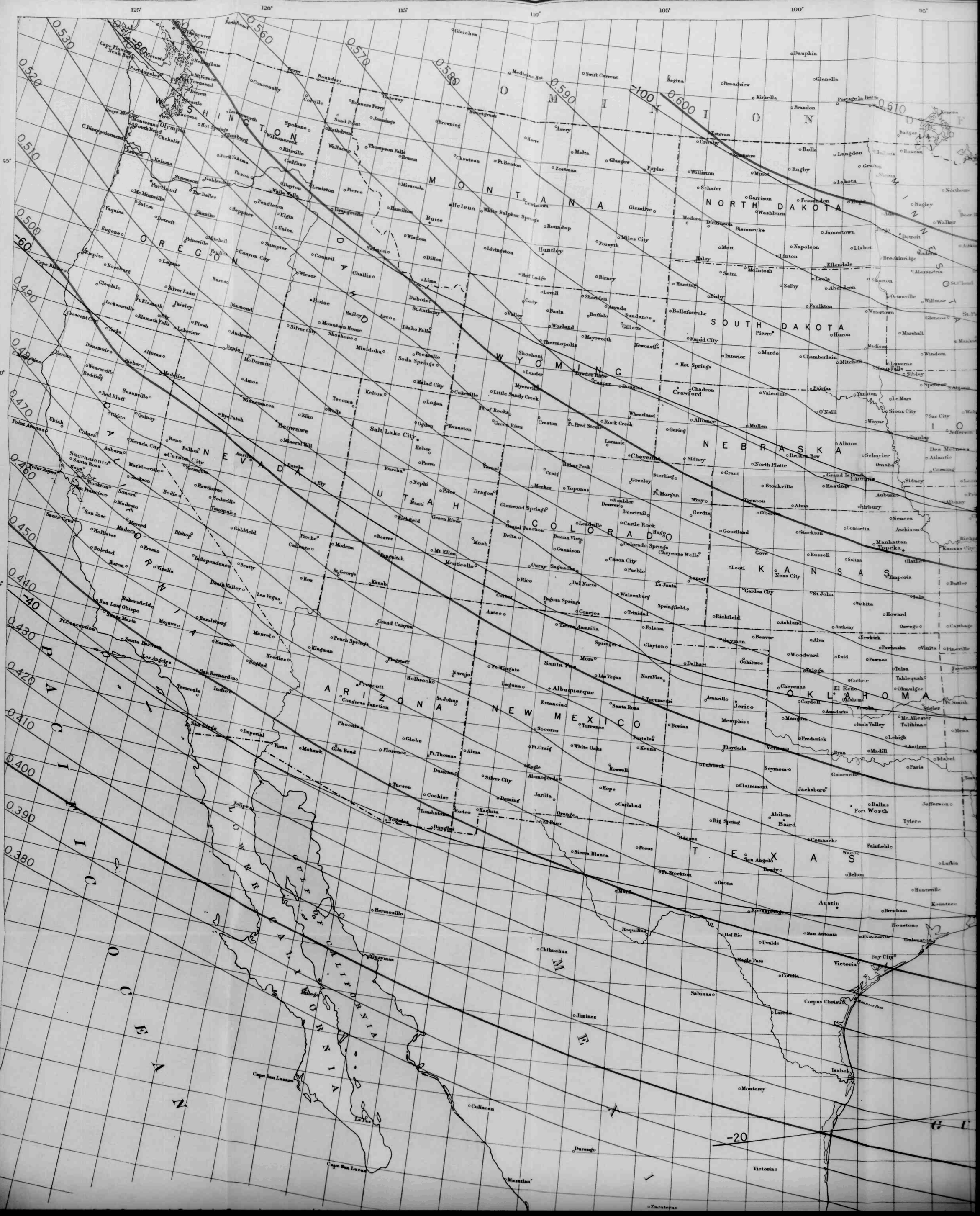
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

4.5 mm

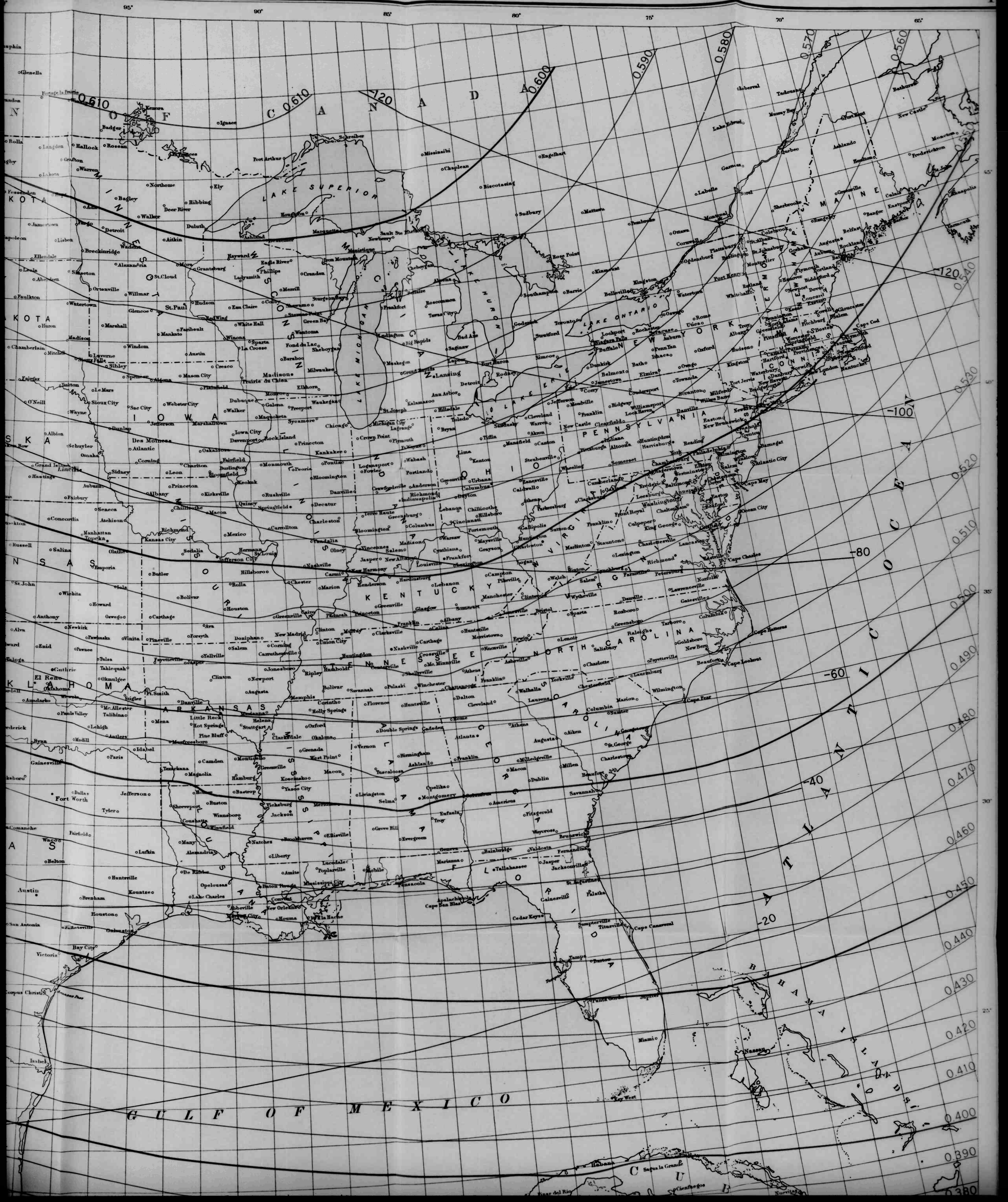
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

3.5 mm

LINES OF EQUAL MAGNETIC VERTICAL INTENSITY AND OF EQUAL



AND OF EQUAL ANNUAL CHANGE IN THE UNITED STATES FOR 1925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90°
85°
80°
75°
70°
65°
0.610
0.600
0.590
0.580
0.570
0.560
0.550
0.540
0.530
0.520
0.510
0.500
0.490
0.480
0.470
0.460
0.450
0.440
0.430
0.420
0.410
0.400
0.390
0.380
-120
-100
-80
-60
-40
-20
35°
30°
25°
CANADA
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ONTARIO
LAKE ERIE
MINNESOTA
WISCONSIN
MICHIGAN
IOWA
ILLINOIS
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
VERMONT
NEW HAMPSHIRE
MASSACHUSETTS
CONNECTICUT
RHODE ISLAND
ATLANTIC OCEAN
GULF OF MEXICO
BAHAMA ISLANDS
CUBA
Duluth
Minneapolis
Chicago
Detroit
Cleveland
Buffalo
Pittsburgh
Philadelphia
New York
Boston
Portland
Montreal
Quebec
Toronto
Ottawa
Winnipeg
Fargo
Omaha
Kansas City
St. Louis
Memphis
New Orleans
Atlanta
Charleston
Jacksonville
Miami
Key West
Havana
Nassau
Houston
Dallas
Fort Worth
San Antonio
Galveston
Denver
Salt Lake City
Seattle
Portland
San Francisco
Los Angeles
Albuquerque
Phoenix
El Paso
Cheyenne
Billings
Helena
Spokane
Boise
Reno
Sacramento
Las Vegas
Santa Fe
Oklahoma City
Tulsa
Little Rock
Nashville
Louisville
Indianapolis
Columbus
Milwaukee
Madison
Des Moines
Sioux City
Omaha
Lincoln
Wichita
Topeka
Kansas City
Jefferson City
Springfield
Cincinnati
Richmond
Washington
Baltimore
Wilmington
Norfolk
Raleigh
Columbia
Savannah
Tampa
Orlando
Mobile
Birmingham
Montgomery
Jackson
Shreveport
Corpus Christi
Brownsville
Laredo
El Paso
Albuquerque
Flagstaff
Tucson
Yuma
San Diego
Los Angeles
Bakersfield
Fresno
Stockton
Sacramento
Redding
Eureka
Medford
Klamath Falls
Bend
Pendleton
Walla Walla
Yakima
Wenatchee
Seattle
Bellingham
Vancouver
Victoria
Prince Rupert
Dawson
Whitehorse
Fort Nelson
Edmonton
Calgary
Lethbridge
Medicine Hat
Regina
Saskatoon
Prince Albert
The Pas
Churchill
Thunder Bay
Sault Ste. Marie
Sudbury
North Bay
Timmins
Kapuskasing
Moosonee
Cochrane
Hearst
Fort Frances
Kenora
Dauphin
Brandon
Portage la Prairie
Glenella
Rolla
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Warren
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Tulsa
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Taloga
Guthrie
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Okmulgee
El Reno
Oklahoma
Ft. Smith
Sugler
Amadarko
Wewoka
McAllester
Paula Valley
Talihina
Danville
Lehigh
Antlers
Madill
Ryan
Idabel
Paris
Gainesville
Dallas
Fort Worth
Jefferson
Tyler
Comanche
Fairfield
Waco
Belton
Austin
Huntsville
Brenham
Kountze
Houston
Galveston
Victoria
Bay City
Corpus Christi
Aransas Pass
Isabel
Hallettsville
Lufkin
Alexandria
Liberty
Beaumont
Port Arthur
Lake Charles
Opelousas
Baton Rouge
Abbeville
New Orleans
Morgan City
Houma
Pt. a la Hache
Mississippi City
Mobile
Pensacola
Apalachicola
Cape San Blas
Tallahassee
Jasper
Lake City
Gainesville
Palatka
St. Augustine
Cedar Keys
Sumterville
Titusville
Cape Canaveral
Tampa
Bartow
Punta Gorda
Jupiter
Miami
Key West
Nassau
Habana
Sagua la Grande
Cienfuegos
Nuevitas
Rincon del Rio
Ashland
Houghton
Marquette
Escanaba
Manistique
Newberry
Sault Ste. Marie
Schreiber
Port Arthur
Fort Frances
Ignace
Badger
Kenora
Missinaibi
Chapleau
Biscotasing
Sudbury
Mattawa
Pembroke
Eagle River
Phillips
Ladysmith
Hayward
Iron Mountain
Menominee
Green Bay
Sturgeon Bay
Sheboygan
Manitowoc
Two Rivers
Kewaunee
Algoma
Ahnapee
Port Washington
Milwaukee
Racine
Kenosha
Waukegan
Chicago
Michigan City
Gary
Hammond
Lafayette
Logansport
Fowler
Wabash
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Muncie
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Terre Haute
Greencastle
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Danville
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Culpeper
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Fredericksburg
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Charlottesville
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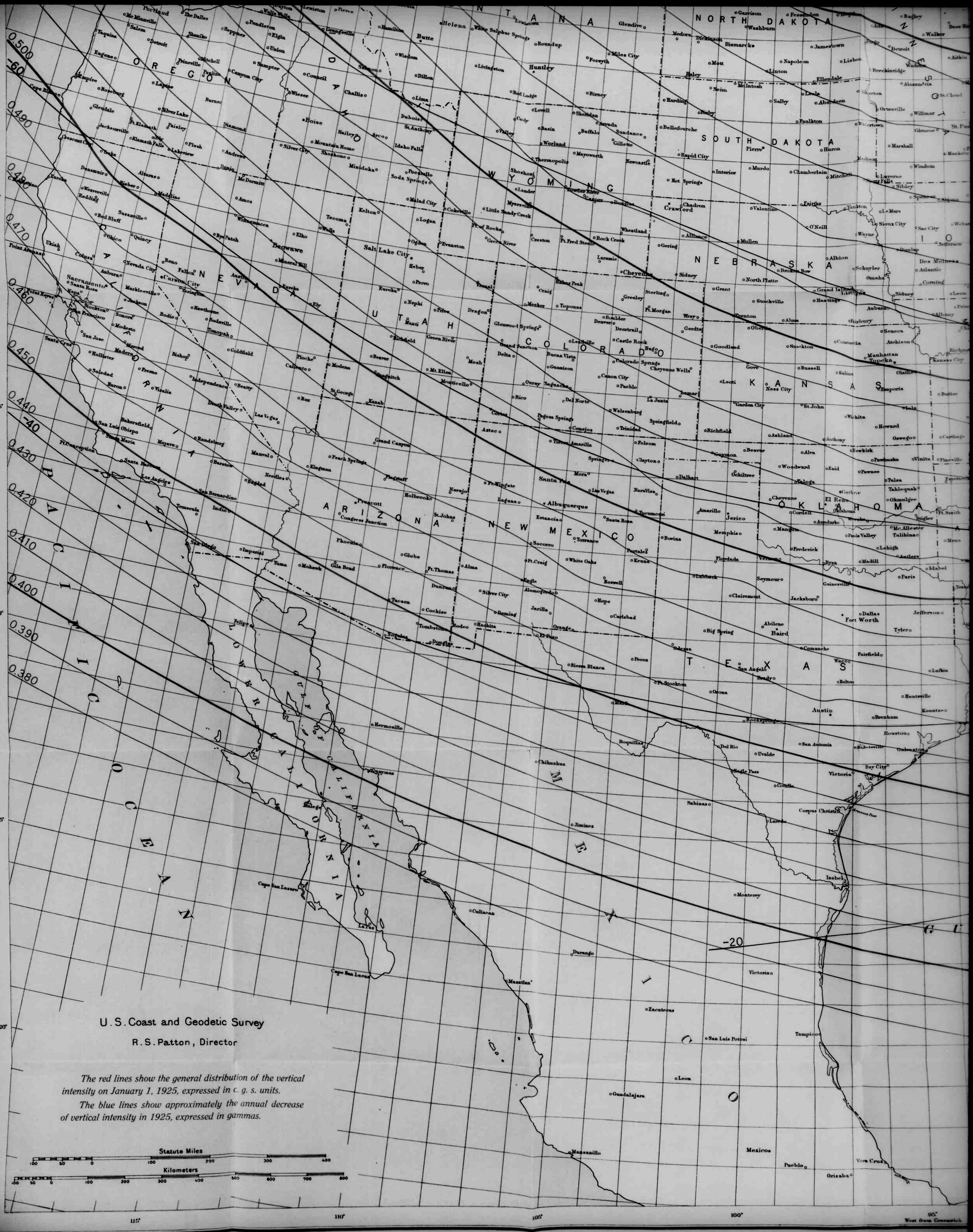
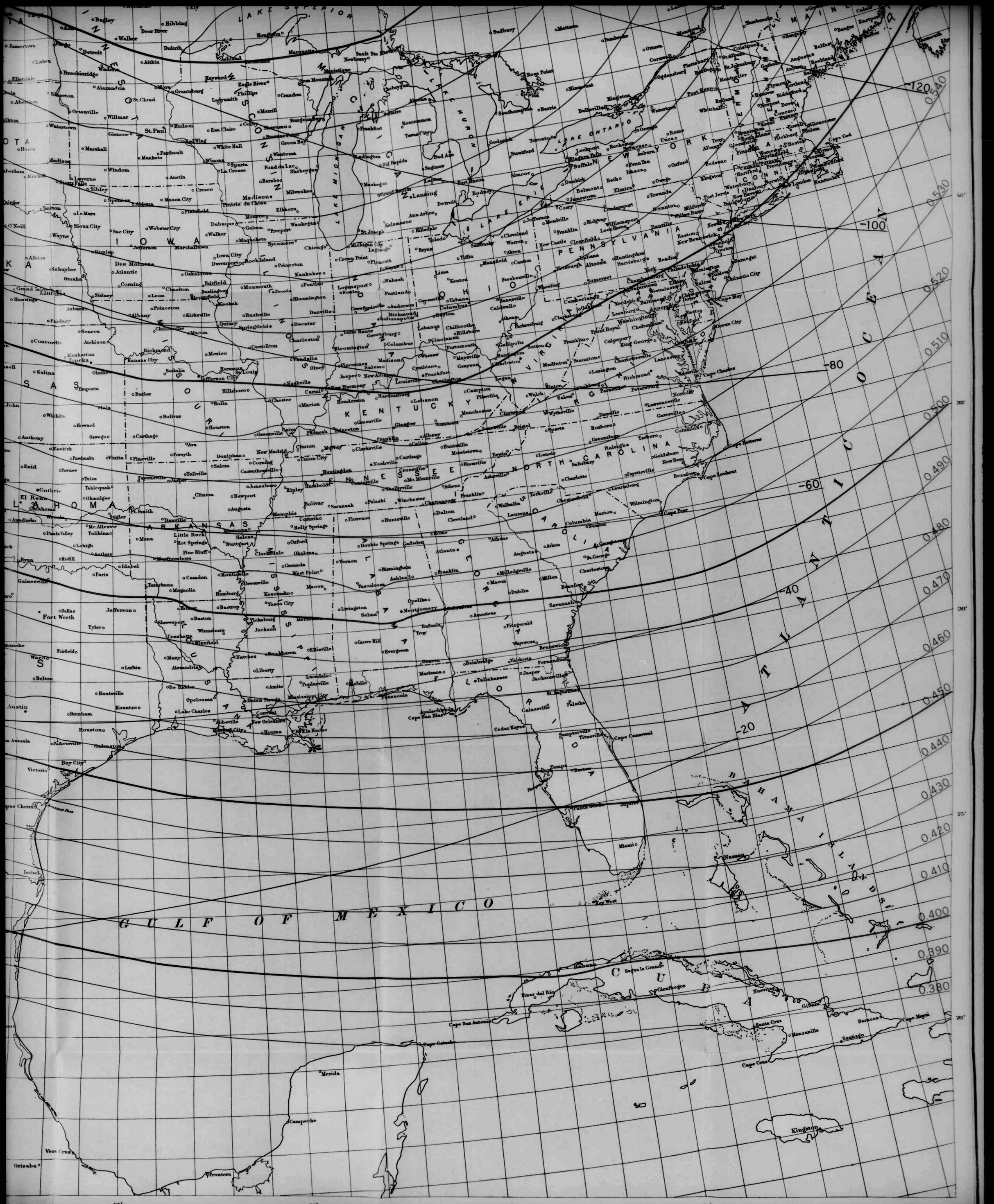


U.S. Coast and Geodetic Survey

R.S. Patton, Director

The red lines show the general distribution of the vertical intensity on January 1, 1925, expressed in c. g. s. units.

The blue lines show approximately the annual decrease of vertical intensity in 1925, expressed in gammas.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LAKE HURON
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ATLANTIC OCEAN
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WEST VIRGINIA
VIRGINIA
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MASSACHUSETTS
MAINE
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
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MISSOURI
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SOUTH CAROLINA
GEORGIA
FLORIDA
ALABAMA
MISSISSIPPI
LOUISIANA
ARKANSAS
OKLAHOMA
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-120
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0.430
0.420
0.410
0.400
0.390
0.380
60°
35°
30°
25°
20°
95° West from Greenwich
90°
85°
80°
75°
C & G S Print D-422

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